Ministry of Natural Resources

Ontario

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Annual Report on Forest Management 2010/11

Annual Report on Forest Management

For the year April 1, 2010
to March 31, 2011

Ontario

Minister of Natural Resources
of the Province of Ontario

To his Honour
The Lieutenant-Governor of the
Province of Ontario

May it please your Honour

The undersigned begs respectfully to present to your Honour the Annual Report on Forest Management for the fiscal year beginning April 1, 2010 and ending March 31, 2011.

Michael Gravelle

Minister

July, 2012

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Overview

Ontario's Crown forests are managed in a sustainable manner to ensure long-term forest health while providing environmental, economic and social benefits to Ontarians. The annual report on forest management addresses legal requirements outlined in the Crown Forest Sustainability Act and the Declaration Order regarding the Ministry of Natural Resources' (MNR) Class Environmental Assessment Approval for Forest Management on Crown lands in Ontario.

The Annual Report on Forest Management 2010/11 provides information to help in understanding how Ontario's Crown forests are being managed. The report summarizes forest management activities for the period April 1, 2010 to March 31, 2011. The following is a summary of key forest management activities for 2010/11:

Natural Disturbance

- Weather disturbances caused tree mortality in approximately 695,417 hectares of forests while fire affected approximately 16,296 hectares. Insects and disease caused tree mortality in approximately 4.1 million hectares.

Forest Harvesting

- 10.6 million cubic metres of wood were harvested from approximately 120,847 hectares. Forestry operations and the subsequent manufacturing of forest products generated substantial economic benefits for the economy of Ontario. The investment (including capital and repair expenditures) in Ontario's forest industry was $802 million.

Forest Renewal

- 56,618 hectares of harvest area were regenerated by artificial means- tree planting and/or seeding; 65,788 hectares were regenerated naturally, approximately 41,112 hectares were site prepared and 41,129 hectares were tended. Another 176,373 hectares were assessed for their regeneration status. Of the total area assessed, 88.7% was declared as having met an acceptable silvicultural standard. $53.3 million was expended from the renewal trusts and $65.5 million was accrued to the renewal trusts.

executive summary

Forest Access Roads

- In total 3,683 kilometres of primary, branch and operational roads were constructed (majority being operational). Over 26,000 kilometres of roads were maintained, with the majority of the road maintenance activities occurring on primary roads. Access controls were established on 574 kilometres of roads and 626 kilometres were decommissioned.

Compliance Monitoring

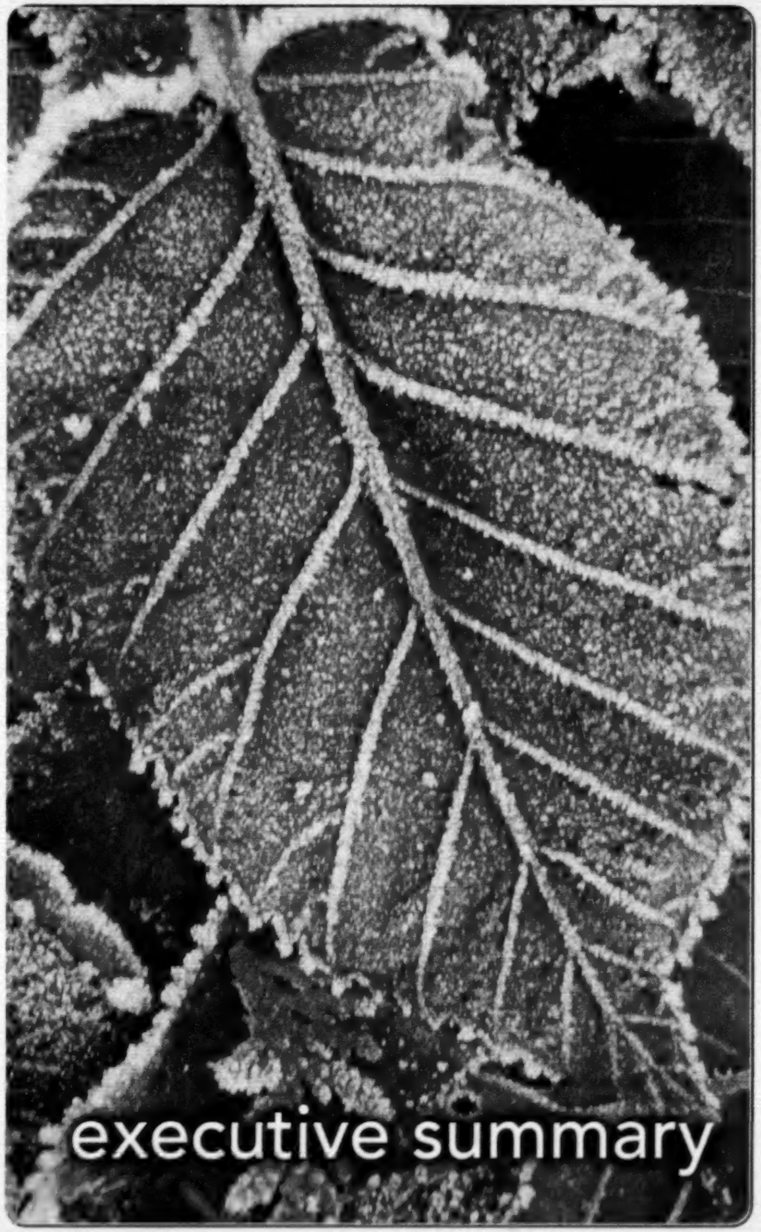
- Over 3,200 inspections of forest operations were conducted by both the forest industry and the MNR. The compliance rate was 98%.

Independent Forest Audits

- Eleven independent forest audits were conducted. Ten of the eleven audit reports concluded that, during the term of the audit, the forests were being managed in general compliance with legislation and policy requirements, licence requirements, and in accordance with the principles of sustainable forest management. The Wabigoon Forest was not deemed to be in compliance with legislation and policy requirements and was not considered by the audit team to be sustainably managed. This licence was not recommended for extension.

Forest Certification

- The Ottawa Valley Forest was certified to the Forest Stewardship Council (FSC) standard for the first time. All previously certified forest management units continued efforts to demonstrate ongoing conformity to their selected certification systems during the fiscal year. Based on the certification audit cycles, a number of management units underwent re-certification audits during the year and were successful in maintaining forest certification standards.



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Annual Report on Forest Management- Overview

The annual report on forest management addresses legal requirements outlined in the Declaration Order (MNR-71) regarding the MNR's Class Environmental Assessment Approval for Forest Management on Crown lands in Ontario. The report is prepared consistent with the principles and intent of the Crown Forest Sustainability Act (CFSA).

This is the sixteenth annual report on forest management. It covers the period April 1, 2010 to March 31, 2011. It contains, in part, a summary and analysis of 42 management unit annual reports submitted to the MNR in November 2011. Unless otherwise stated, information portrayed in tables and figures in this provincial annual report are sourced from the management unit annual reports.

Data is subject to ongoing improvement and the reader is advised that changes in data may occur as improvements are made to the dataset. New or updated data and information submitted since the previous annual report on forest management are included in this report. Errors or omissions noted since the publication of previous annual reports are also corrected or updated in this report. Minor rounding errors may occur due to the precision of the numbers being displayed.

This annual report provides information to help in understanding how Ontario's Crown forests are being managed, as well as baseline information to compare with future forest management activities and annual reports. Crown forest resources within the Area of the Undertaking (AOU) and their associated programs are the main focus for this annual report. MNR programs that deal with private land or provincial parks are not reported in this document.

More information about MNR programs is available at: http://www.ontario.ca/forests.

introduction

Key Facts Background Data

Key Facts

This section reports on the size and land types found within Ontario, with a special focus on the types of forest.

Summary of Land Classes in Ontario 2010/11

- Ontario is 107.6 million hectares in size;
- 86.6% of Ontario is publicly-owned (93.2 million ha);
- 66% of the province is forest (71.1 million ha);
- 52% is productive forest (56.0 million ha); and
- 9.1% is within existing or proposed Parks and Protected areas (9.7 million ha) of which 6.4 million hectares is forest.

Land classes are summarized in Table 1a and Figure 1a. Further detail can be found in The Forest Resources of Ontario 2011.

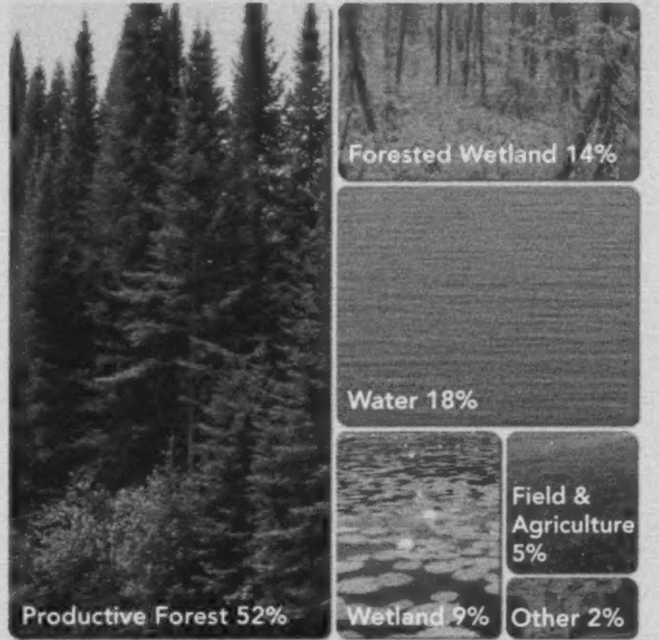
Table 1a - Total Provincial Area by Land Class

	Total Provincial Area (hectares)			
Land Class	Crown	Parks and Protected Areas	Other	Total
Water	17,028,847	1,819,446	594,998	19,443,291
Wetland	8,170,336	1,082,148	245,512	9,497,997
Field/Agriculture	32,564	6,901	5,362,145	5,401,611
Other Non-forest	816,335	414,077	995,339	2,225,750
Forest	57,427,164	6,419,161	7,221,444	71,067,769
Total:	83,475,246	9,741,734	14,419,438	107,636,418

Source: Landcover 2008 satellite imagery

Ontario's Forests

Figure 1a: Area percentage by land class



Key Facts Background Data

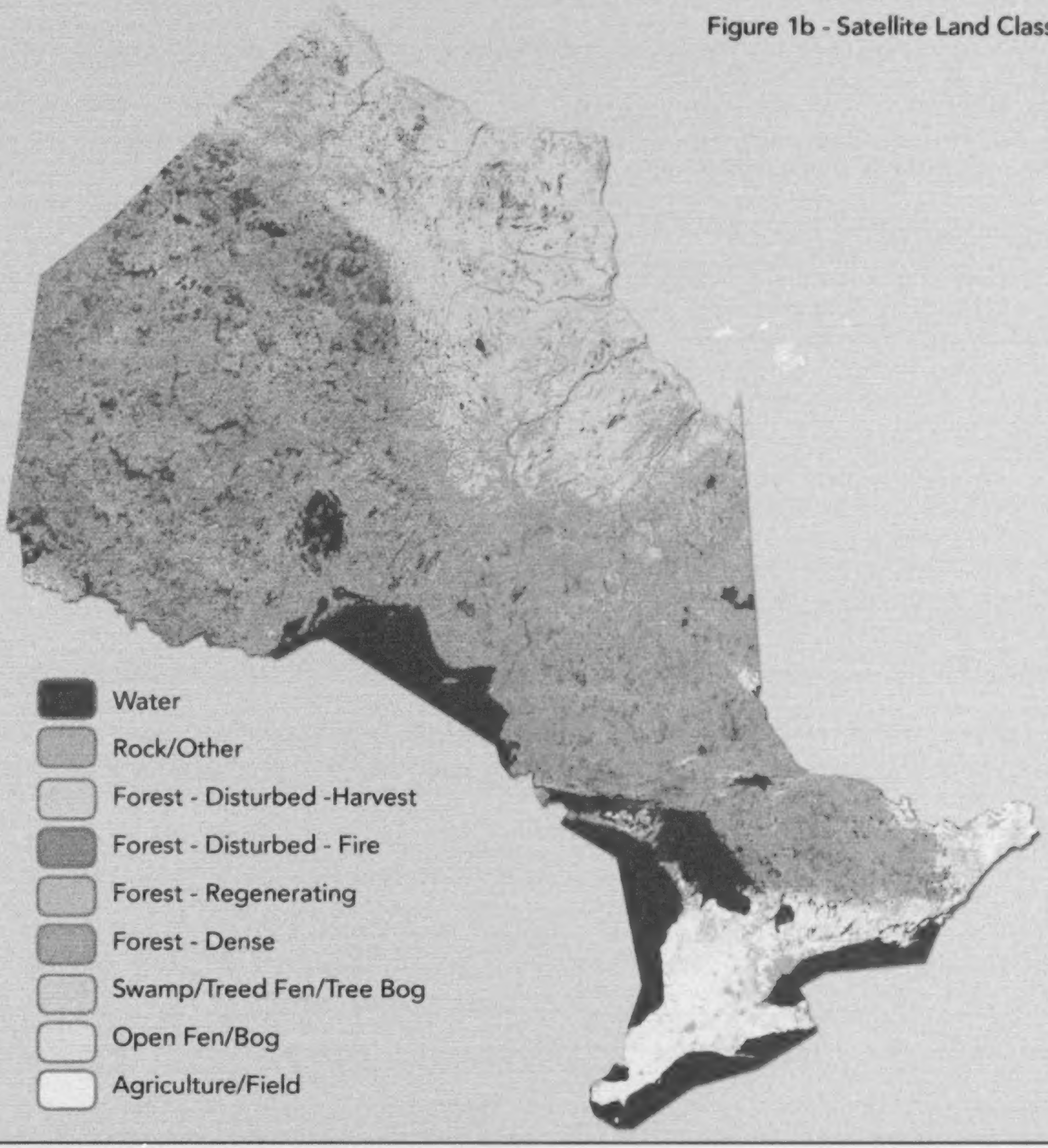
Background

Throughout this document, Crown land refers to land vested in Her Majesty in right of Ontario and, in general, managed by the MNR. Statistics found in this section are from provincial inventories compiled in The Forest Resources of Ontario 2011 which can be consulted for more information.

Ontario is approximately 107.6 million hectares in size; 88.3 million hectares of this area is land and 19.3 million hectares is water. Over 66% of the province is comprised of non-productive and productive forests. This is a significantly higher proportion than the remainder of Canada where forests represent only 42% of the country's total area. Figure 1b illustrates the broad land classes in Ontario.

Three major land ownership categories are described in this section: Crown, parks and private or other owners (Table 1a,b,c). Seventy-eight percent of the province's area is Crown or publicly-owned land and water (Figure 1c). Provincial and national parks cover an additional nine percent, and privately or federally-owned land and water account for the remaining 13%.

Figure 1b - Satellite Land Classes


Water
Rock/Other
Forest - Disturbed -Harvest
Forest - Disturbed - Fire
Forest - Regenerating
Forest - Dense
Swamp/Treed Fen/Tree Bog
Open Fen/Bog
Agriculture/Field

The AOU or zone where forest management occurs is 43.8 million hectares in size. The forest area managed for harvest in Ontario, known as productive forest, is 27.2 million hectares (Table 1c).

For forest management purposes, the province is partitioned geographically, depending on the context. Some administrative units referenced in this report include management units, districts and regions. For a definition of these terms go to http://www.mnr.gov.on.ca/en/Business/Forests

Most forest operations on Crown land occur in the AOU (Figure 1c). A further breakdown of land classes within the province and the AOU are detailed in Table 1b and 1c as well as Figures 1d, 1e, 1f and 1g.

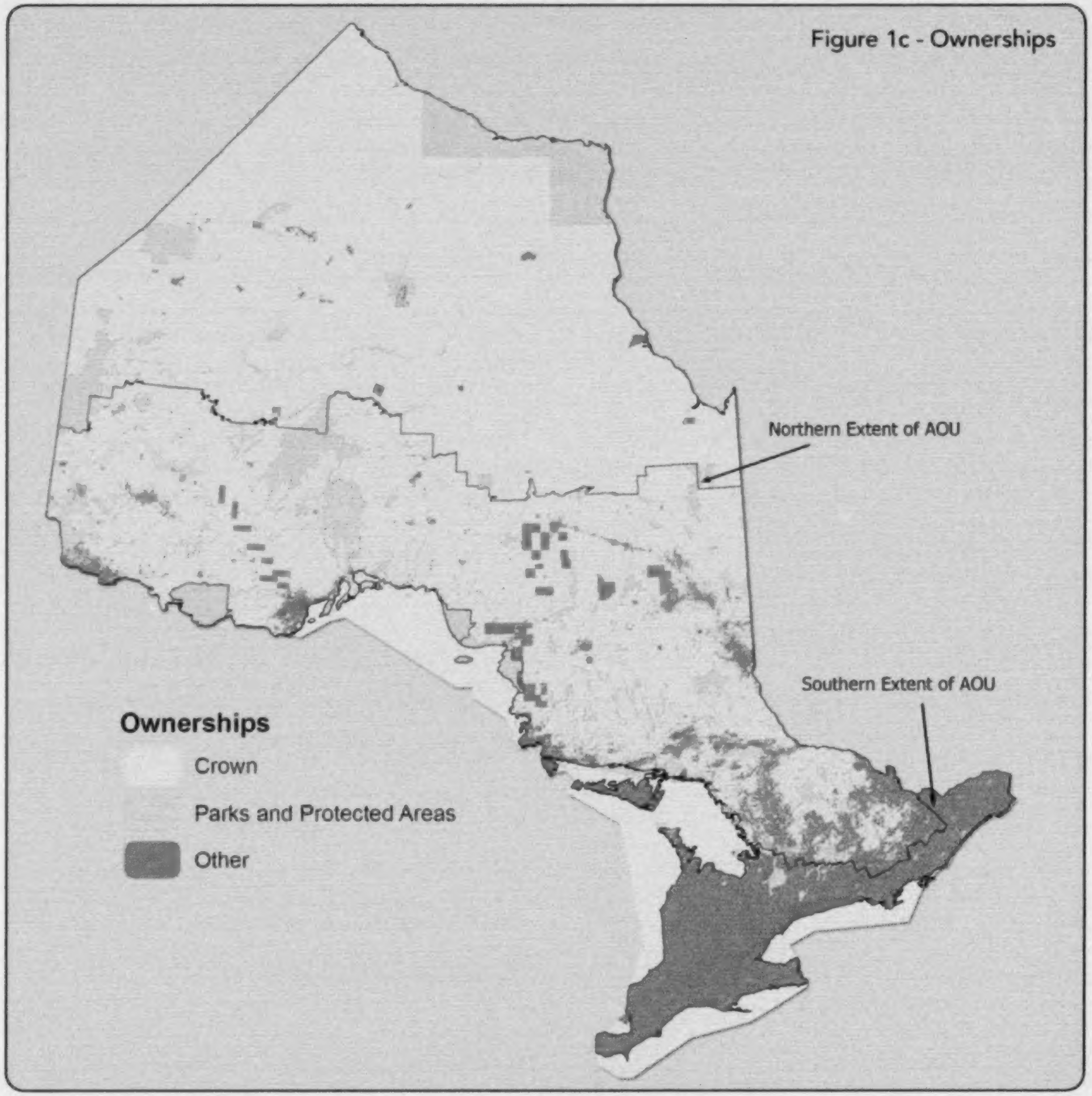


Figure 1c - Ownerships

Northern Extent of AOU
Southern Extent of AOU
Ownerships
Crown
Parks and Protected Areas
Other

Key Facts | Background | Data

Data

Table 1b - Total Provincial Area by Land Class, 2011[1]

	Total Provincial Area (hectares)			
Land Class	Crown	Parks and Protected Areas	Other	Total
Non-forested Land and Water				
Water (Great Lakes)	8,544,737	150,917	-	8,695,654
Water	8,484,110	1,668,529	594,998	10,747,637
Wetland	8,170,336	1,082,148	245,512	9,497,997
Rock	357,098	131,427	146,701	635,225
Field/Agriculture	32,564	6,901	5,362,145	5,401,611
UCL	50,099	3,893	815,160	869,152
Other	409,138	278,757	33,478	721,373
Subtotal:	26,048,082	3,322,573	7,197,994	36,568,649
Non-productive Forest				
Treed Wetland	12,744,149	1,142,442	1,086,587	14,973,177
Productive Forest				
Dense Deciduous	3,116,344	541,011	1,695,077	5,352,433
Dense Conifer	13,388,952	1,587,482	1,018,988	15,995,422
Mixed Forest	11,719,114	1,579,184	2,242,483	15,540,781
Sparse Forest	11,043,761	1,200,602	1,133,904	13,378,267
Regenerating Forest	2,307,411	188,708	20,457	2,516,575
Disturbance - Fire	1,268,389	173,083	11,998	1,453,470
Disturbance - Harvest	1,839,044	6,649	11,949	1,857,643
Productive Forest:	44,683,015	5,276,719	6,134,858	56,094,592
All Forest:	57,427,164	6,419,161	7,221,444	71,067,769
Grand Total:	83,475,246	9,741,734	14,419,438	107,636,418

[1] *The information reported is updated on a 5 year cycle, and will differ slightly from inventory summaries due to source*

Figure 1d - Total Provincial Area % by Land Class

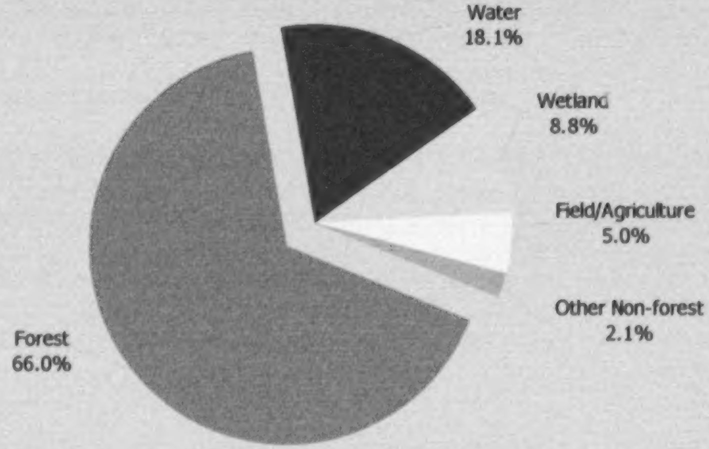


Figure 1e - Total Provincial Forest Area % by Class

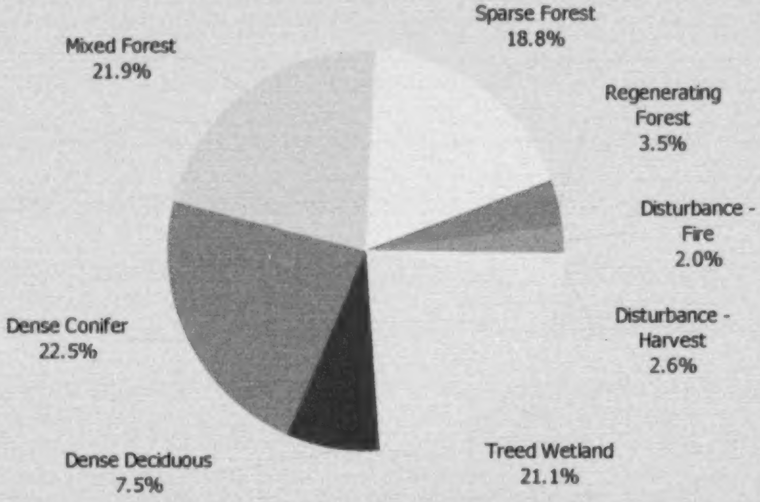


Table 1c - Total AOU[2] Area Land Class, 2011

Land Class	Total Provincial Area (hectares) Crown	Parks and Protected Areas	Other	Total
Non-forested Land and Water				
Water	4,550,586	882,338	276,775	5,709,699
Wetland	284,810	63,001	98,389	446,200
Rock	118,127	57,895	102,826	278,848
Field/Agriculture	13,728	649	581,423	595,800
UCL	38,553	2,228	158,173	198,954
Other	115,668	13,687	29,503	158,858
Subtotal:	5,121,471	1,019,799	1,247,088	7,388,358
Non-productive Forest				
Treed Wetland	1,350,304	168,821	182,965	1,702,090
Productive Forest				
Dense Deciduous	2,838,949	291,235	1,125,349	4,255,532
Dense Conifer	7,427,663	972,884	664,485	9,065,031
Mixed Forest	9,615,450	1,012,613	1,811,293	12,439,356
Sparse Forest	4,338,470	581,912	958,025	5,878,407
Regenerating Forest	867,094	62,855	3,106	933,055
Disturbance - Fire	239,860	41,559	6,442	287,861
Disturbance - Harvest	1,838,982	5,937	11,929	1,856,848
Productive Forest:	27,166,467	2,968,993	4,580,629	34,716,090
All Forest:	28,516,771	3,137,814	4,763,594	36,418,180
Grand Total:	33,638,242	4,157,613	6,010,683	43,806,538

[2] *AOU or Forest Management Zone - see figure 1c*

Figure 1f - AOU Area % by Land Class

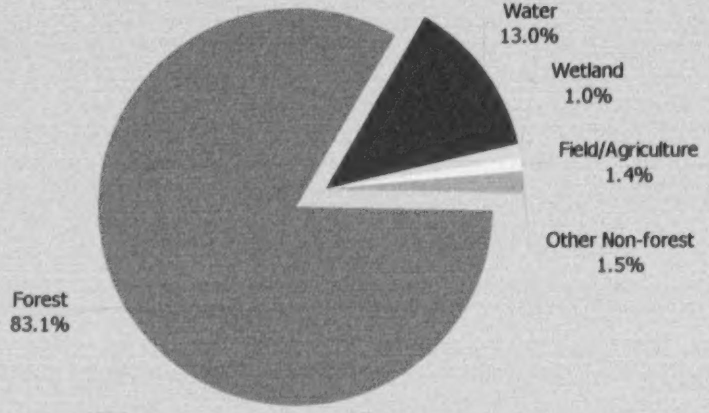
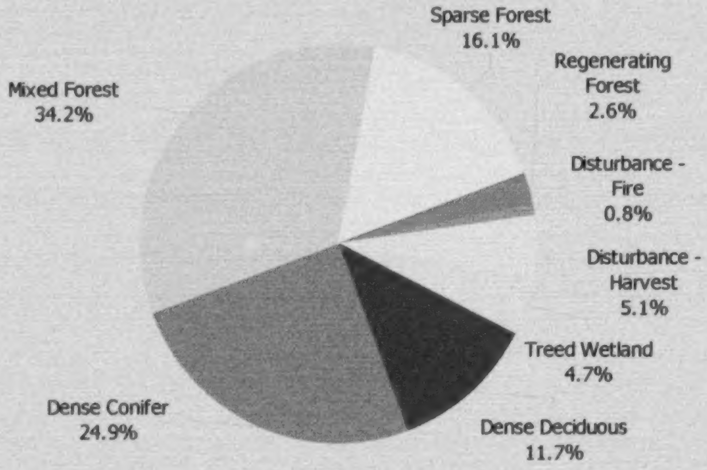


Figure 1g - AOU Forest Area % by Forest Class



Key Facts

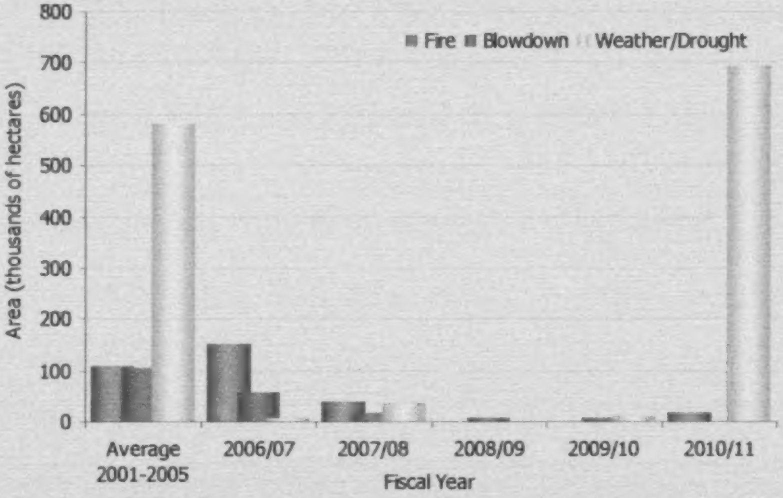
This section reports on natural disturbances in Ontario including fire, insect damage, forest disease and weather events.

Summary of Natural Disturbance - 2010/11

- Forest losses due to abiotic natural disturbances of fire and blowdown were low, however losses to weather increased significantly from the previous year (Figure 2a);
- Forest fire activity was low for a third year in a row at 16,296 hectares. The average fire was 700 hectares in size;
- Forest insects caused significant mortality and growth loss (Figure 2b). Spruce budworm typically affects large forest areas and causes the most mortality of any forest insect. In 2010/11, defoliation increased significantly compared to previous years. Most of the defoliation occurred in the Northeast Region in proximity to Sudbury, Manitoulin Island and North Bay (Figure 2g);
- The largest biotic disturbance agent in 2010/11 was aspen decline. Over 3.1 million hectares occurred mainly in the Northwest Region (Thunder Bay – Nipigon and Dryden). The cause of the decline is believed to be the cumulative impact of a number of biotic and abiotic disturbances. Biotic volume losses were estimated at over 7 million cubic metres (Figure 2c);
- Detailed tables of area and volumes affected by natural disturbances are listed in the data section of this chapter; and
- Detailed summaries of major forest disturbances in 2010 are available on-line at: http://ontario.ca/forests.

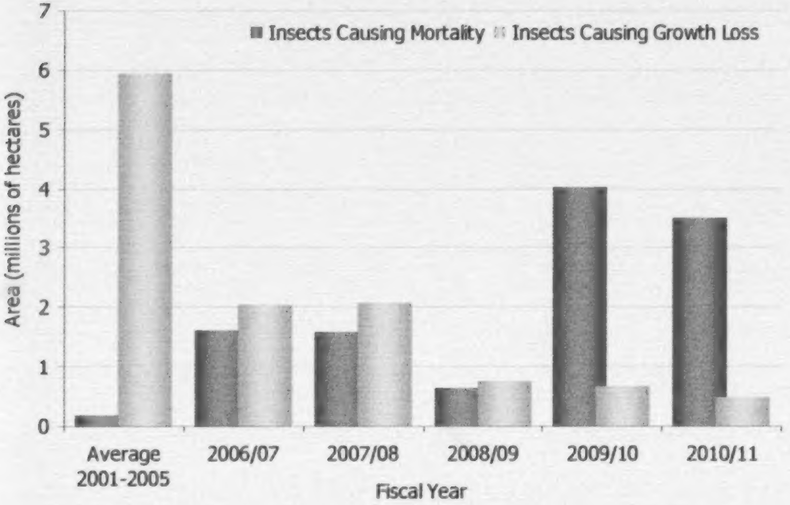
natural disturbance

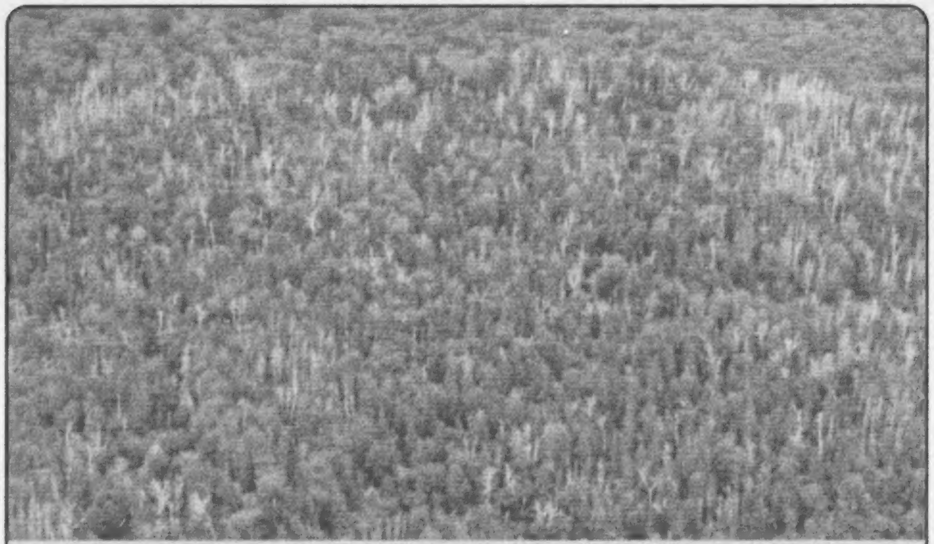
Figure 2a - Total Area Disturbed by Abiotic Disturbances



Natural Disturbances

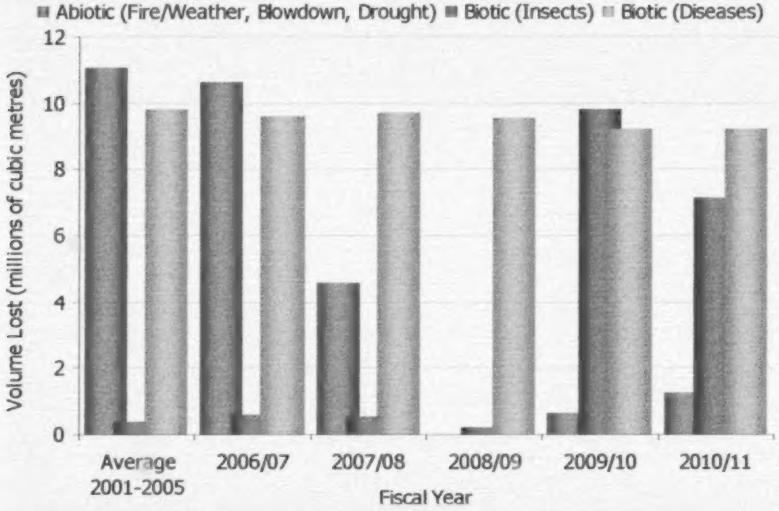
Figure 2b - Total Area Disturbed by Insects

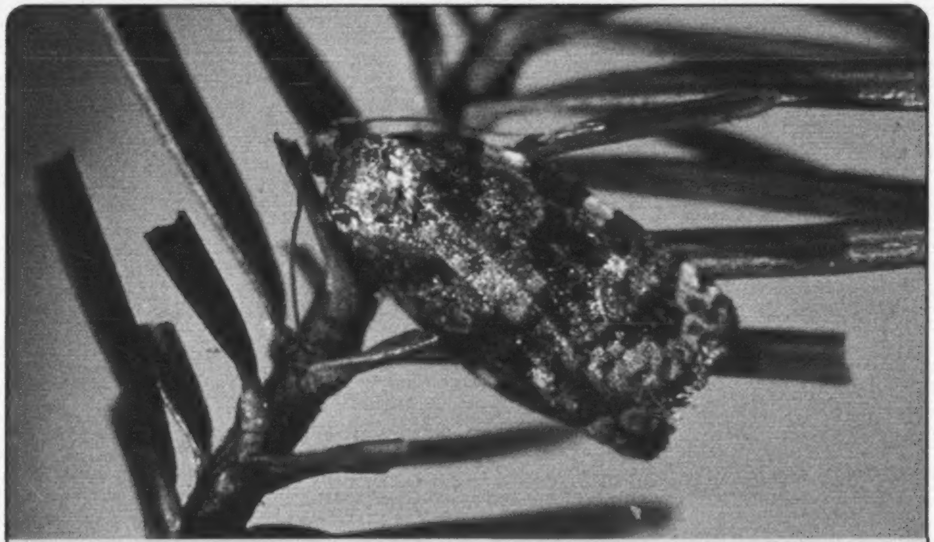




Poplar Decline

Figure 2c - Estimated Crown AOU Volume Lost to Natural Disturbances





Spruce Budworm Adult

Key Facts | Background | Data

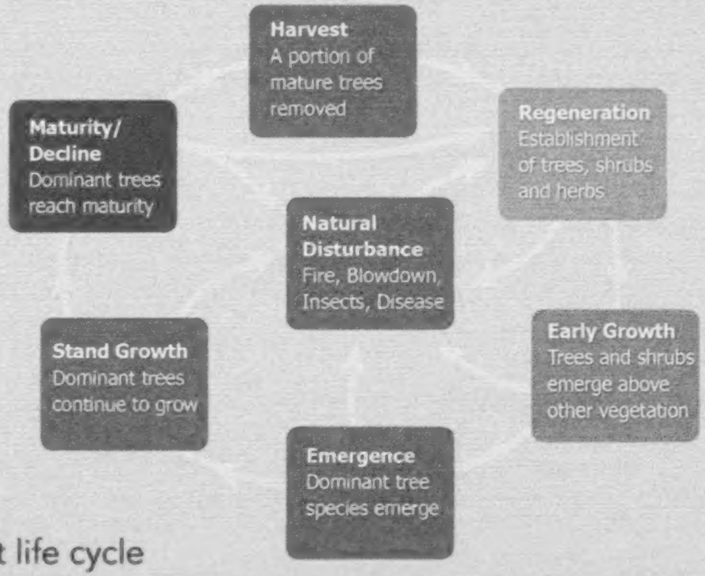
Background

There are two main groups of natural forest disturbances measured in Ontario, abiotic and biotic. Abiotic disturbances are those caused by non-living factors including wildfire, drought, and severe weather such as wind, snow or hail. Biotic disturbances are those caused by living factors such as insects (forest tent caterpillars, gypsy moths, spruce budworm) or diseases (hypoxylon, root rot, or Stillwell syndrome).

Natural disturbances such as forest fires, insects, diseases and severe weather events occur throughout the life cycle of the forest. Natural disturbances except for diseases, are measured by area (hectares) and volume (cubic metres) of trees killed or damaged. Losses to tree diseases are estimated by calculating an annual average volume loss for all chronic diseases. Estimates of the area affected and wood volumes lost due to insects, disease, and severe weather are based on studies completed by a forest health monitoring partnership between the Canadian Forest Service and the MNR.

All estimates of disturbance area, both for the province and for the AOU, encompass all forest lands. Estimates for AOU disturbance volume, however, are based on Crown production forest lands only. Depending on the severity of damage to trees from these disturbances, it is often possible to conduct salvage operations in disturbed areas in order to harvest timber and thereby reduce economic losses and the threat of forest fires. These operations are reported as harvesting, and are discussed in the forest harvest section. The total provincial area by natural disturbance type can be found in Tables 2a and 2b. Estimated volume losses for Crown AOU forests are summarzed in Table 2c and 2d. A summary of estimated volumes lost by tree species for all natural disturbances is found in Table 2e. Proportions of these areas are illustrated in Figures 2d, 2e and 2f.

Cinder Conk on Yellow Birch



Harvest
A portion of mature trees removed

Regeneration
Establishment of trees, shrubs and herbs

Early Growth
Trees and shrubs emerge above other vegetation

Emergence
Dominant tree species emerge

Stand Growth
Dominant trees continue to grow

Maturity/ Decline
Dominant trees reach maturity

Natural Disturbance
Fire, Blowdown, Insects, Disease

Forest life cycle

Natural Disturbances

Forest Fires

The MNR records the area and volume disturbed by forest fires across all forested areas. The number and size of forest fires varies dramatically year to year, depending on the weather. This variability is illustrated in Figure 2a, where the last five years of provincial fire disturbance is shown as well as the average from the previous five year period. Estimated volume losses are found in Table 2c.

Severe Weather

Windstorm damage (commonly referred to as "blowdown"), drought, and cold weather damage (ice/snow - severe cold) are the most common weather related agents causing significant tree mortality and volume losses. Windstorms of various intensities occur periodically throughout the province. Damage from these storms is only recorded if it is discovered and if it is of a significant magnitude. Estimated volume losses are found in Table 2c.

Insect Damage

The damaged area and volume loss caused by the most destructive insects are based on estimates of forested areas where 30 percent or more of the foliage was removed. Usually, a number of years of repeated defoliation are required to kill a tree. This varies for each pest, the tree species under attack, and other factors. Forested areas may be defoliated by more than one insect. Areas reported as defoliated may include different degrees of severity. The total area impacted by insects for the last five years is presented in Table 2a. Growth loss due to insects is reported in Table 2b. Estimated volume losses from insects are found in Tables 2c and 2d.

Insect Traps

Emerald Ash Borer Damage

Natural Disturbances

Diseases

The annual changes in area and volume in a forest stand that result from natural, disease-induced mortality are not usually significant enough to be recorded for inventory update purposes. For example, chronic diseases such as root rot may kill only a few trees scattered throughout a forest stand. Generally no area loss is recorded for most diseases. However, an estimate is made annually of the volume of wood in the dead trees and the volume of growth loss in the remaining live trees. Volume estimates of the effects of chronic disease are derived from estimates of growth and mortality losses caused by rot, stem decay and foliage dieback. These estimated losses to disease for the last five years have been relatively stable at less than 10 million cubic metres lost annually (Table 2c). Most of the estimated losses are in the form of tree mortality.

Calculating Volume Losses

Many of the insects and diseases that occur in Ontario's forests do not actually kill the trees they infest but simply reduce the amount of growth that occurs in a spring/summer season. For example, a forest tent caterpillar infestation can reduce aspen growth by 75% in a season and white birch by 40%. This growth loss is recorded as current annual increment volume (CAI). Many years of repeated defoliation can eventually lead to tree mortality, and this is recorded differently, as gross total volume (GTV) of wood lost.

Most abiotic disturbances like fire or blowdown cause major forest damage, and usually end up with significant tree mortality within the area of the disturbance. Each disturbance type is studied and growth loss or mortality factors are developed based on these field samples. Chronic tree diseases such as hypoxylon or root rot are not measured in area, as they are assumed to occur in most forested stands to some extent. Estimates by tree species and age are calculated for the entire AOU, and reported for Crown forests.

Surveying for Insect Damage

Data

Table 2a - Total Provincial Area of Natural Disturbance Causing Forest Mortality

Area in hectares

Disturbance Type	Average 2001-2005	2006/07	2007/08	2008/09	2009/10	2010/11
Abiotic Damage - Wildfire and Weather						
Fire	110,318	149,807	40,153	240	548	16,296
Blowdown	106,360	57,636	17,924	6,630	7,947	744
Weather	550,990	-	936	509	12,151	695,417
Drought	30,709	7,071	33,315	-	-	-
Total:	798,378	214,514	92,328	7,379	20,645	712,457
Biotic Damage - Forest Insects and Disease						
Spruce Budworm	6,654	817,434	849,052	450,387	180,027	330,855
Jack Pine Budworm	20,700	791,888	687,715	138,103	5,938	46,989
Gypsy Moth	40,321	10,475	33,056	40,745	3,638	-
Poplar/Birch Complex	104,361	-	-	-	3,798,599	3,119,177
Other Insects	2,325	5,984	1,977	8,146	20,635	36
Total:	174,361	1,625,782	1,571,800	637,381	4,008,837	3,497,056
Total Mortality Area:	972,739	1,840,295	1,664,128	644,759	4,029,482	4,209,513

Table 2b - Total Provincial Area of Natural Disturbance Causing Forest Growth Loss

Area in hectares

Disturbance Type	Average 2001-2005	2006/07	2007/08	2008/09	2009/10	2010/11
Abiotic Damage - Wildfire and Weather						
Weather	181,601	-	376,715	509	12,151	695,417
Drought	1,189,866	7,071	33,315	-	-	-
Total:	1,371,467	7,071	410,030	509	12,151	695,417
Biotic Damage - Forest Insects and Disease						
Spruce Budworm	229,490	817,434	849,052	450,387	291,628	330,855
Jack Pine Budworm	19,832	791,888	687,715	138,103	209,217	46,989
Gypsy Moth	40,321	10,475	33,056	40,745	3,638	-
Forest Tent Caterpillar	5,457,474	370,772	371,512	42,895	8,912	60,424
Poplar/Birch Complex	81,155	35,804	84,588	98,431	116,817	16,369
Other Insects	118,433	22,668	46,776	4,895	27,479	42,259
Total:	5,946,705	2,049,042	2,072,698	775,456	657,692	496,895
Total Growth Loss Area	7,318,172	2,056,113	2,482,728	775,965	669,842	1,192,311

Figure 2d - Volume Lost by Disturbance Type - 2010/11

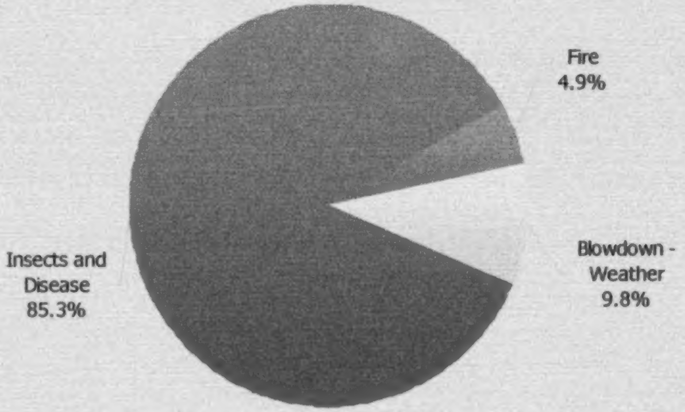
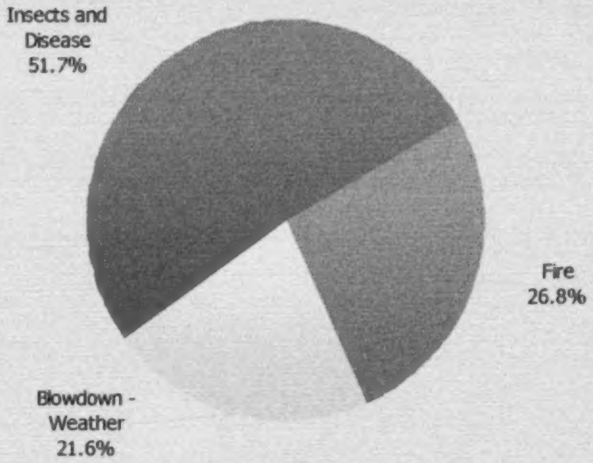


Figure 2e - Volume Lost by Disturbance Type - 2006/07 - 2010/11



Natural Disturbances

Table 2c - Crown AOU Volume - Natural Disturbance Causing Forest Mortality

Volume in m^3 (gross total volume)

Disturbance Type	Average 2001 2005	2006/07	2007/08	2008/09	2009/10	2010/11
Fire	2,321,972	5,849,552	3,214,957	-	-	412,565
Blowdown/Weather	8,749,724	4,775,952	1,390,923	2,749	653,180	815,905
Insects and Disease	378,534	624,770	526,638	202,181	9,798,753	7,131,558
Chronic Diseases	9,841,378	9,595,952	9,689,325	9,519,692	9,215,711	9,224,927
Total:	21,291,608	20,846,226	14,821,843	9,724,622	19,667,644	17,584,954

Table 2d - Crown AOU Volume - Natural Disturbance Causing Forest Growth Loss

Volume in m^3 (current annual increment volume)

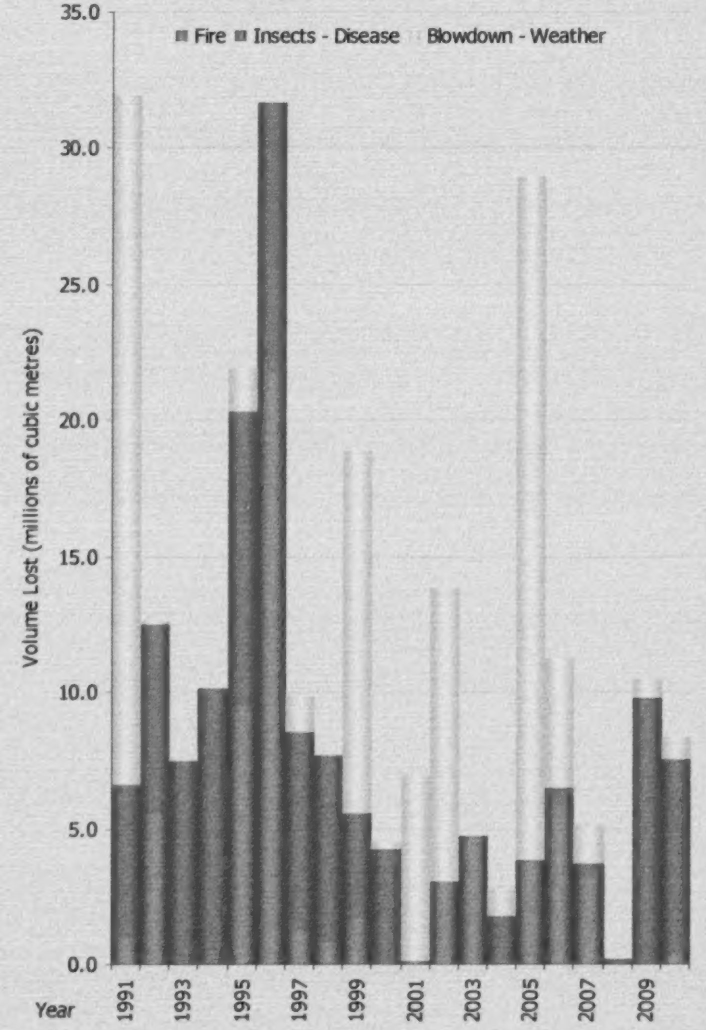
Disturbance Type	Average 2001 2005	2006/07	2007/08	2008/09	2009/10	2010/11
Drought/Weather	178,345	1,671	503	-	826	23,646
Insects and Disease	1,238,198	142,710	138,712	64,560	30,457	21,312
Chronic Diseases	2,162,285	1,909,781	1,910,691	2,170,992	2,148,697	2,150,846
Total:	3,578,828	2,054,163	2,049,906	2,235,551	2,179,980	2,195,804

Table 2e - Crown AOU Volume - Natural Disturbance Causing Mortality by Tree Species

Volume in m^3 (gross total volume)

Tree Species	Average 2001 2005	2006/07	2007/08	2008/09	2009/10	2010/11
Red & White Pine	102,834	691,750	85,795	72	1,327	128,526
Jack Pine	1,778,596	2,444,110	1,406,578	49,847	830,014	61,856
Spruce	5,432,182	1,565,909	1,727,142	8,774	357,854	286,832
Balsam Fir	457,731	382,769	441,906	122,787	68,024	186,060
Other Conifers	147,184	291,830	78,757	17,710	14,680	126,046
Poplar	2,546,349	2,658,267	976,286	4,113	9,142,552	7,179,428
White Birch	580,636	2,306,991	391,441	1,359	35,792	55,307
Oak	2,214	79,690	32	77	579	28,838
Maple	1,398	472,703	5,754	-	-	187,804
Other Hardwoods	402,358	368,262	18,825	193	1,112	119,329
Total:	11,451,481	11,262,282	5,132,518	204,930	10,451,933	8,360,027

Figure 2f - Estimated Crown AOU Volume Lost to Natural Disturbances



Natural Disturbances

Key Facts | Background | Data

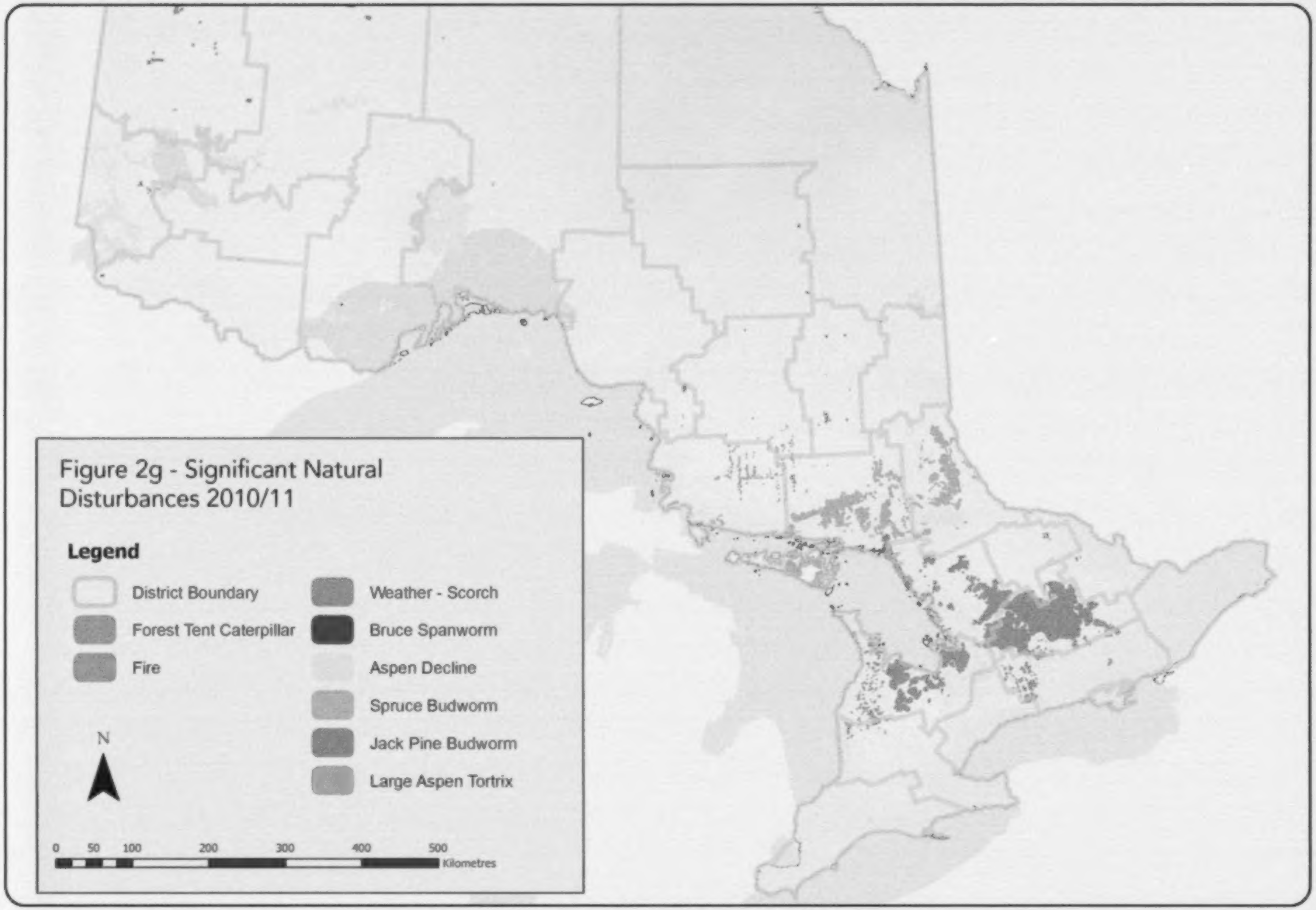


Figure 2g - Significant Natural Disturbances 2010/11

Legend
District Boundary
Forest Tent Caterpillar
Fire
Weather - Scorch
Bruce Spanworm
Aspen Decline
Spruce Budworm
Jack Pine Budworm
Large Aspen Tortrix
N
0
50
100
200
300
400
500
Kilometres

Key Facts Background Data

Key Facts

This section reports on the level of forest harvesting activities. Forest managers are required to report the area and volume harvested from Ontario's Crown forests each year. Harvesting activities on private land are not reported.

Summary of Harvest Area – 2010/11

- Total area harvested on Crown land was 120,847 hectares, most of which was harvested under the clearcut silvicultural system (Figure 3a);
- Harvest levels in 2010/11 are 42% of the allowable harvest area (Figure 3a);
- Natural disturbances as reported in the previous section account for more area annually than harvesting (Figure 3b); and
- 150 hectares of natural disturbance that was salvaged for timber.

forest harvest

Figure 3a - Area Harvested by Silvicultural System

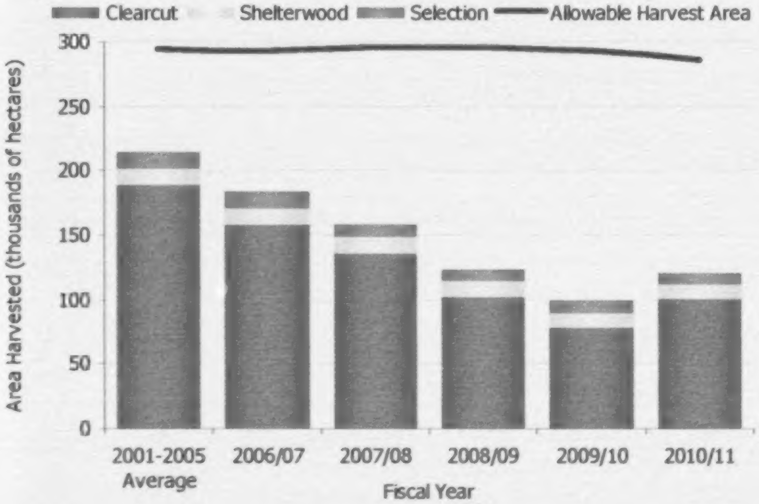
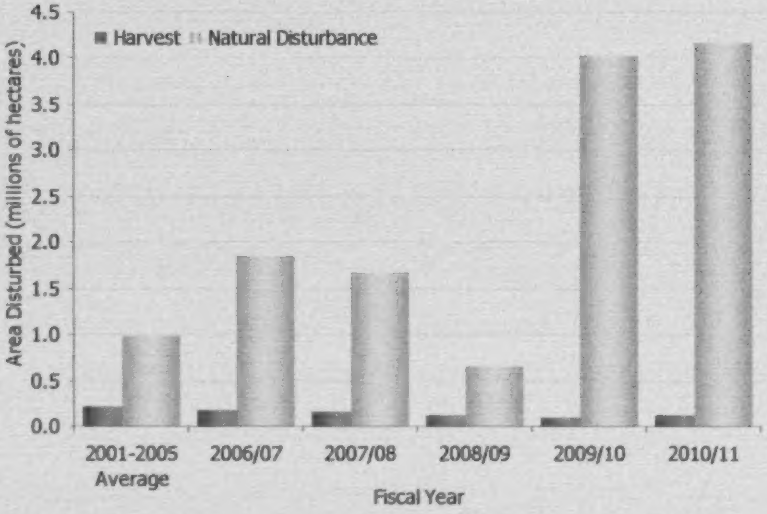


Figure 3b - Disturbance Area within the AOU



Summary of Harvest Volume - 2010/11

- Market conditions and a downturn in the forest industry have contributed to significantly less harvest volume over the last four years (Figure 3c and Table 3a);
- 13.6 million cubic metres of wood was harvested on Crown land (Figure 3c) with the majority being softwood (conifer) volume; and
- The total volume harvested is significantly lower than the total mortality volume (17.6 million) caused by insect, disease, severe weather and fire combined (Table 3c and Figure 3d, 3e, 3f).

Table 3a - Harvest volume by species (cubic metres) 2010/11

Softwood Species	Volume (m³)
White Pine	353,158
Red Pine	179,406
Jack Pine	3,777,111
Spruce	4,952,820
Hemlock	8,144
Balsam Fir	336,676
Cedar	9,183
Larch	36,970
Other Softwood	147,290
Total Softwoods	9,800,758

Hardwood Species	Volume (m³)
Maple	566,548
Yellow Birch	57,886
White Birch	406,309
Oak	42,251
Beech	33,396
Poplar	2,254,454
Basswood	6,145
Ash	6,142
Other Hardwood	177,051
Total Hardwoods	3,550,181
Total Mixed Species	225,958
All Species Total	13,576,897

Figure 3c - Softwood and Hardwood Volumes Harvested

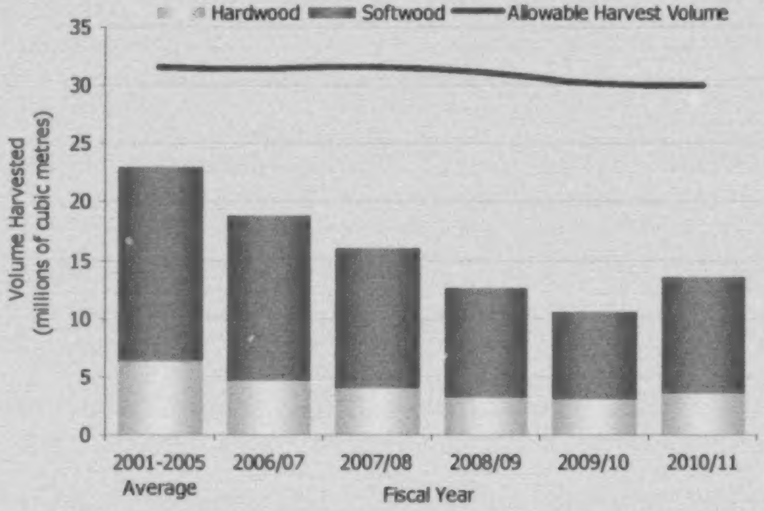
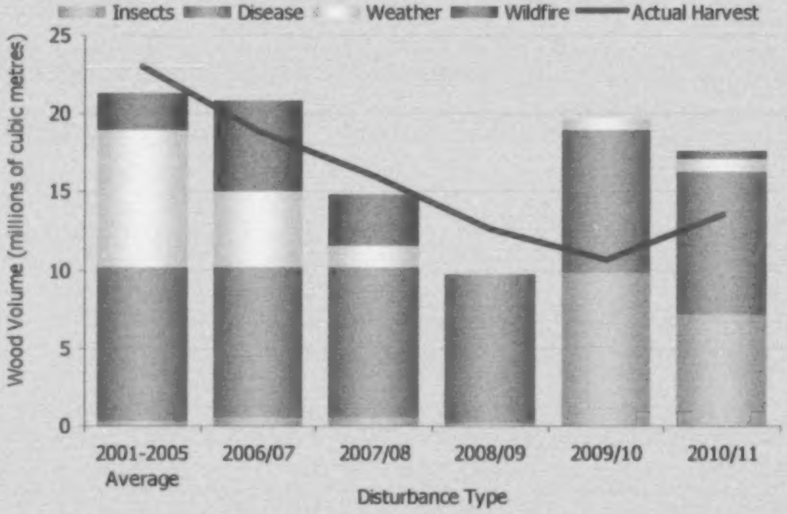


Figure 3d - AOU Volume for Harvest & Natural Disturbances



Summary of Clearcut Size – 2010/11

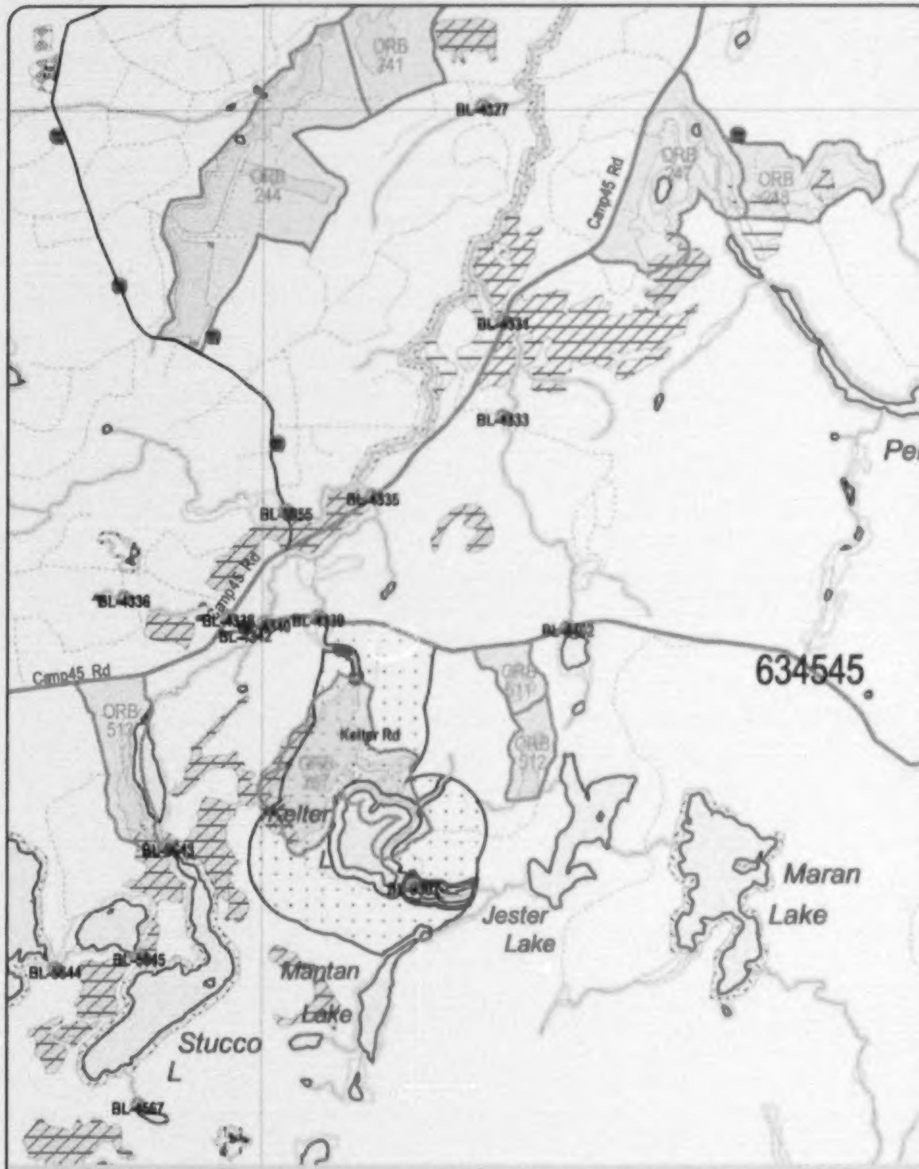
Management unit annual reports were analyzed to determine size and frequency of areas cut under the clearcut silviculture system in 2010/11:

Boreal Forest Region
In 2010/11, there were a total of 972 active clearcut harvest areas in the Boreal Forest Region. Of these clearcuts, 922 (95%) were less than 260 hectares in size. The average clearcut size was 72 hectares and the maximum clearcut was 1,842 hectares.

Great Lakes-St. Lawrence Forest Region
In 2010/11, there were a total of 651 active clearcut harvest areas in the Great Lakes-St. Lawrence Forest Region. Of these clearcuts, 643 (99%) were less than 260 hectares in size. The average clearcut size was 41 hectares and the maximum clearcut was 774 hectares.

Management Unit Annual Reports are available online at the MNR's electronic Forest Management Planning Website: http://ontario.ca/forestplans. Additional details regarding clearcut size under the clearcut silvicultural system can be observed in these reports.

Note:
The Wabigoon Forest did not submit an Annual Report for the 2010/11 fiscal year. All area values include estimates for the Wabigoon Forest based on the 2009/10 Annual Report. Harvest volumes reflect actual 2010/11 values based on scaling records.


ORB 241
BL-4327
ORB 244
Camp45 Rd
ORB 247
ORB 248
BL-4331
BL-4333
BL-4335
BL-4336
Camp45 Rd
634545
ORB 511
ORB 512
Kelter Rd
Kelter
Jester Lake
Maran Lake
Mantan Lake
Stucco L
Pe

A portion of an operational harvest block map

Background

Ontario's forests are harvested in a sustainable manner and are regulated and monitored according to an approved Forest Management Plan (FMP). The MNR requires that the allowable harvest for a management unit be set at a level that will sustain a healthy forest. The FMP specifies both the allowable harvest area and the associated harvest volumes. In Ontario the regulation of allowable harvest is based on area, not volume.

Silviculture Systems Used in Ontario

Harvesting is one of a series of actions that when combined with forest renewal and maintenance activities (e.g. tending, protection), represents a silviculture system. These systems are classified according to the method of harvesting. Ontario uses three silviculture systems: selection, shelterwood and clearcut. Different silviculture systems are used to optimize the regeneration of the forest. The silviculture system chosen is based on the characteristics of the current forest stand as well as the desired future forest condition.

Selection System

In the selection system, mature, unhealthy or undesirable trees in a forested stand are individually harvested (or in small groups) on a cutting cycle that ranges from 10 to 40 years. This method produces stands with trees of different ages, and is referred to as uneven-aged management. The selection system is mainly used in stands of shade tolerant hardwoods (e.g. maple, oak, and beech). The trees left behind provide the necessary shade for the regenerating forest below. The selection silviculture system is mainly used in the Great Lakes-St. Lawrence Forest Region.

Shelterwood Harvest

Shelterwood System

In the shelterwood system, mature trees are harvested in a series of two or more cuts to encourage natural regeneration and growth under, or next to, the residual trees. This is done by cutting trees uniformly over the stand area or in groups or narrow strips. Since stands with trees approximately the same age are produced with this system, it is referred to as even-aged management. The shelterwood system is used in both the Boreal and Great Lakes-St. Lawrence Forest Regions and is mainly applied to forest stands of white and red pine as well as tolerant hardwoods.

Cut-to-length processor

Clearcut System

Forest harvesting under the clearcut system is usually completed in one operation. Individual trees within the harvest area and/or parts of forest stands are retained for silvicultural reasons (e.g. seed trees) or to provide protection for forest values (e.g. marten habitat or cavity dwelling birds). Regeneration methods used can be natural, assisted (e.g. planting, seeding) or a combination of both methods. The clearcut system is also an even-aged system, with the majority of the regenerating trees being the same age. The clearcut system is used mainly with tree species that are adapted to regenerating after natural disturbances, such as wildfires (e.g. jack pine, black/white spruce, poplar, white birch). Currently, in Ontario, clearcut practices are designed to emulate these natural disturbances.

Loading logs onto truck

Natural Disturbance Pattern Emulation (NDPE)

The NDPE guide of 2001 led Ontario to change its forest practices to better maintain forest biodiversity and natural processes. This is accomplished, in part, by emulating as closely as possible the landscape patterns produced by forest fires (e.g. variation in size and shape).

Forest Harvest

While forest harvesting cannot precisely duplicate natural disturbances, the NDPE guide promotes timber harvesting practices that emulate the natural range and pattern of fire disturbances, both small and large. This harvest pattern creates desirable habitat for various wildlife species. Smaller disturbances favour the creation of habitat for species such as moose, black bear and ruffed grouse because this size of disturbance maximizes "edge", where different forest types, features or age classes come together. Larger disturbances create habitat for species which prefer large, uniform forests such as the woodland caribou. Wildlife species are adapted to, and thrive in, forest patterns that have largely been shaped by wildfire.

The NDPE guide also includes a standard for clearcut size. Eighty percent of the planned clearcuts in the Boreal Forest Region and 90% of the planned clearcuts in the Great Lakes-St. Lawrence Forest Region are to be less than 260 hectares. In addition, the guide gives direction on measuring the size of contiguous clearcuts including requirements for temporal and spatial separation. Generally, an adjacent clearcut is considered contiguous if there is less than 200 metres of forested area separating it from the next clearcut. Also, if an adjacent clearcut is over three metres tall or 20 years old it is not considered part of the clearcut.

New landscape guides developed in 2010 will replace the direction in the NDPE guide. The Forest Management Guide for Great Lakes-St. Lawrence Landscapes (the GL-SL Landscape Guide) and the Forest Management Guide for Conserving Biodiversity at Stand and Site Scales (the Stand and Site Guide), was implemented on forest managements beginning on April 1, 2011. The landscape guide applies only to the Great Lakes - St. Lawrence Forest Region. The NDPE Guide will continue to be used for the boreal forest region until the boreal landscape guide is approved.

Harvest block

Data

Table 3b - Harvest volume by species (cubic metres)

Tree Species	2001-2005 Average	2006/07	2007/08	2008/09	2009/10	2010/11
Softwood Species						
White Pine	488,095	574,904	384,641	365,697	405,871	353,158
Red Pine	234,254	252,250	178,100	193,438	167,877	179,406
Jack Pine	5,636,436	4,647,614	4,176,486	3,176,419	3,214,986	3,777,111
Spruce	9,628,007	8,188,750	6,470,060	4,920,959	3,074,250	4,952,820
Hemlock	26,434	33,710	26,633	25,900	14,068	8,144
Balsam Fir	527,603	418,742	443,585	355,112	255,344	336,676
Cedar	32,856	12,128	29,490	13,495	9,576	9,183
Larch	37,770	20,120	37,933	27,803	31,477	36,970
Other Softwood	1,831	4,537	51,344	187,188	126,250	147,290
Total Softwoods	16,613,287	14,152,755	11,798,271	9,266,011	7,299,698	9,800,758
Hardwood Species						
Maple	597,093	695,503	618,228	561,041	506,100	566,548
Yellow Birch	52,687	51,383	42,689	41,935	40,433	57,886
White Birch	590,501	529,723	537,339	386,094	391,301	406,309
Oak	37,732	37,522	36,795	32,419	20,960	42,251
Beech	39,735	49,555	42,680	28,813	21,988	33,396
Poplar	5,022,124	3,267,125	2,751,575	2,091,694	1,971,178	2,254,454
Basswood	13,094	13,408	14,451	8,436	5,460	6,145
Ash	4,272	7,061	5,685	5,091	3,550	6,142
Other Hardwood	2,517	5,756	85,068	116,849	144,354	177,051
Total Hardwoods	6,359,755	4,657,037	4,134,509	3,272,372	3,105,324	3,550,181
Mixed Species						
Total Mixed Species	1,955	32,021	91,849	67,516	201,365	225,958
All Species Total	22,974,996	18,841,813	16,024,630	12,605,900	10,606,387	13,576,897

Table 3c - AOU Volume for Harvest and Natural Disturbances

Disturbance Type	2001-2005 Average	2006/07	2007/08	2008/09	2009/10	2010/11
Harvest	22,974,996	18,841,813	16,024,630	12,605,900	10,606,387	13,576,897
Insects	378,534	624,770	526,638	202,181	9,798,753	7,131,558
Disease	9,841,378	9,595,952	9,689,325	9,519,692	9,215,711	9,224,927
Weather	8,749,724	4,775,952	1,390,923	2,749	653,180	815,905
Fire	2,321,972	5,849,552	3,214,957	-	-	412,565
Total	44,266,603	39,688,039	30,846,473	22,330,522	30,274,031	31,161,851

Figure 3e - Harvest Volume by Species - 2010/11

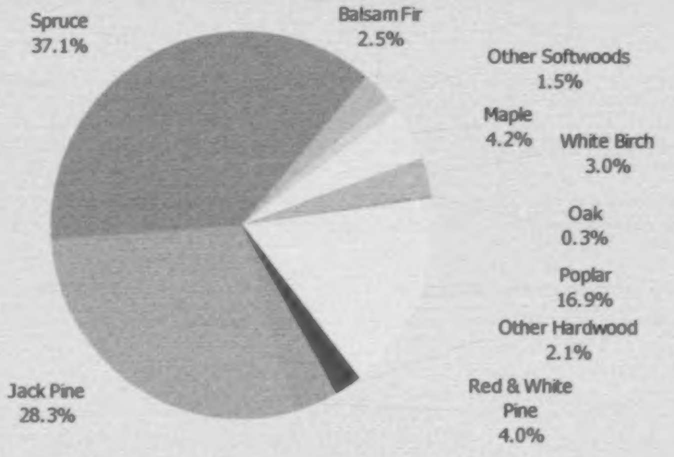
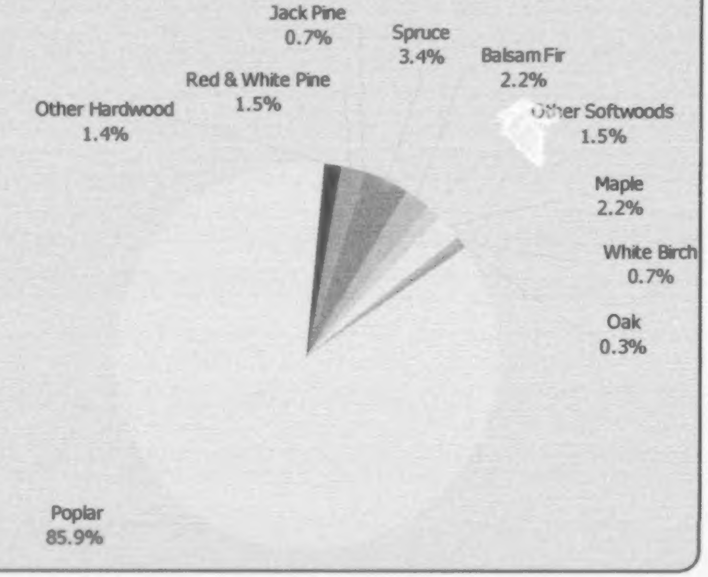


Figure 3f - Natural Disturbance Volume by Species - 2010/11



Key Facts

This section reports on forest renewal and tending activities, protection and funding for renewal and maintenance activities.

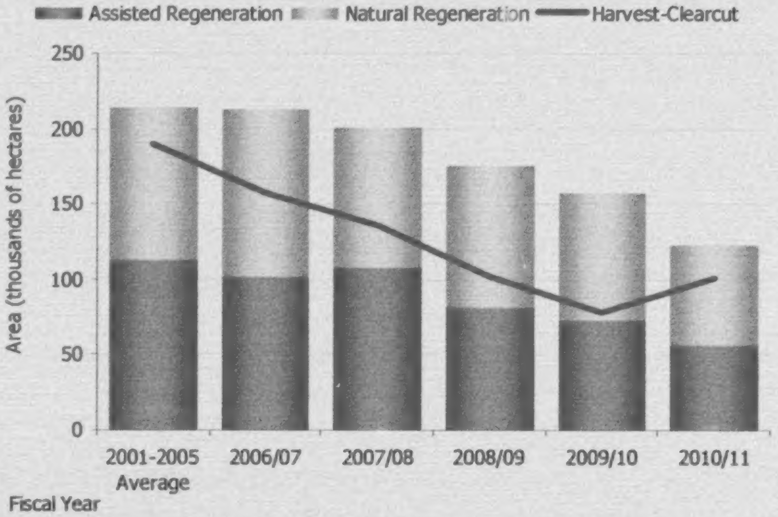
Summary of Forest Renewal and Tending Activities - 2010/11

- Reduced harvest levels in previous years resulted in a reduction in planting, seeding, site preparation and chemical tending (Figure 4a);
- Total regeneration efforts has decreased (a direct result of decreased harvest activity), but the level of regeneration was well above the level of harvest (Figure 4a) as previously harvested areas are regenerated;
- Tree planting was the main method of assisted regeneration with 60 million trees planted in 2010/11 (Table 4b). Natural regeneration was the preferred option to renew areas affected by natural disturbances (e.g. fire, insect, weather events);
- Actual renewal activities were proportional to the actual harvest levels as depicted in Figure 4b. Planned levels were based on annual projected activities in the approved FMP for each forest. Natural regeneration occurred on 54% of all sites (Figure 4c, 4d);
- Shelterwood and selection silviculture systems remained at relatively consistent levels (Figure 4e);
- Mechanical site preparation increased in 2010/11 from the previous year (Figure 4f);
- There was a small amount of prescribed burning conducted for site preparation purposes (3,267ha, Figure 4f); and
- Tending activities were lower than the long-term average (Figure 4g)

Note: The Wabigoon Forest did not submit an Annual Report for the 2010/11 fiscal year. All area values include estimates for the Wabigoon Forest based on the 2009/10 Annual Report.

forest renewal

Figure 4a - Regeneration Area - Clearcut Silvicultural System



Forest Renewal

Key Facts | Background | Data

Figure 4b - Harvest and Regeneration Area - 2010/11

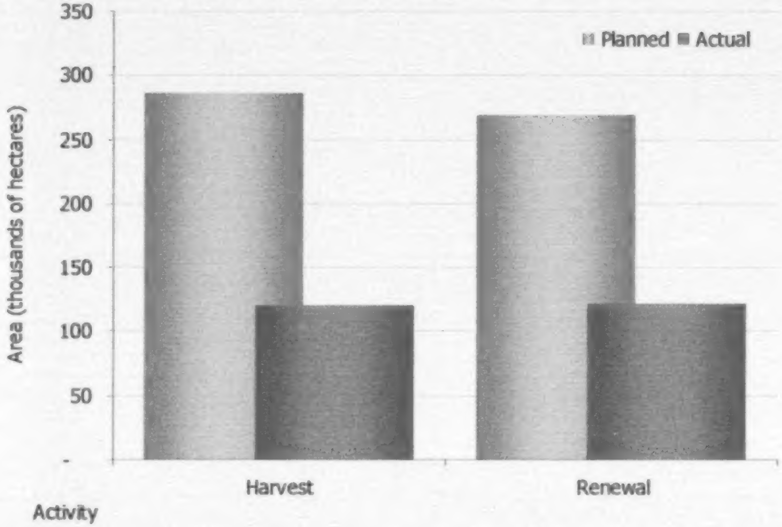


Figure 4c - Renewal Activities - 2010/11

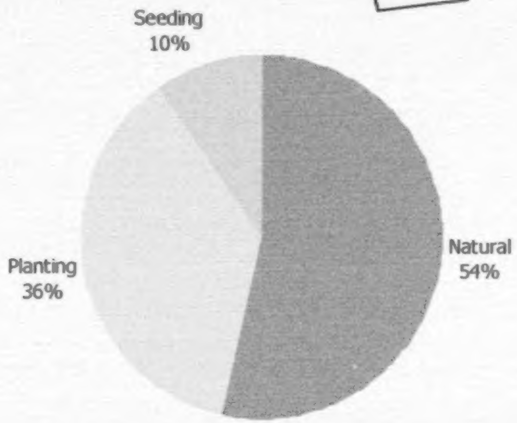


Figure 4d - Renewal Activities - Planned vs. Actual - 2010/11

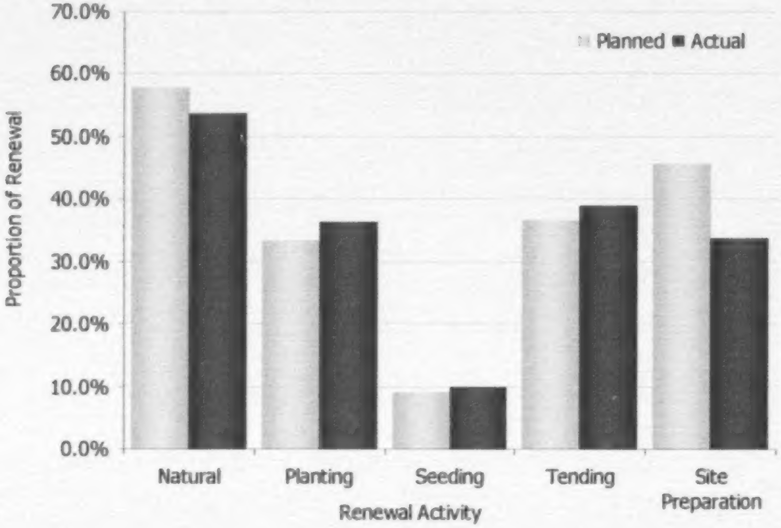
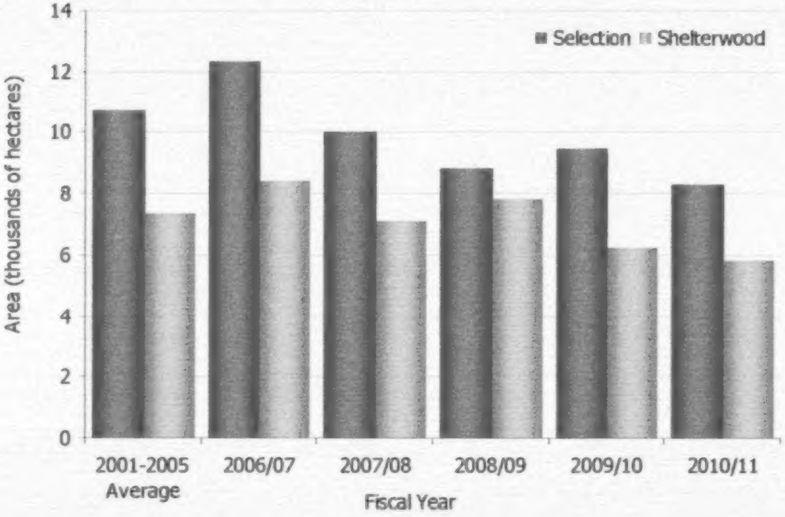


Figure 4e - Regeneration Area - Selection and Shelterwood Systems



Summary of Protection - 2010/11

- Protection operations prevent or manage the damage caused by insects and diseases; and
- Monitoring of a portion of the 2010/11 major forest disturbances found increasing moderate defoliation by spruce budworm. Jackpine budworm defoliation has trended lower over the past three years and there was no aerial spray program conducted in 2010/11.

Summary of Renewal and Maintenance Funding - 2010/11

- Based on increased harvest levels in 2010/11, the revenue in the Trust Funds increased. Silvicultural expenditures from the Forest Renewal Trust Fund were less than in 2009/10, which reflects the reduced harvest level in preceding years (Table 4a).

Table 4a - Provincial forest trust expenditures and contributions - 2010/11

Source	Expenditures (million $)	Contributions (million $)
Forest Renewal Trust Fund	$35.5	$42.7
Forestry Futures Trust Fund[1]	$17.8	$22.8
Total	$53.3	$65.5

[1] Expenditures total includes allocations to IFA audits and the Enhanced Forest Resources Inventory Fund

Figure 4f - Area of Site Preparation

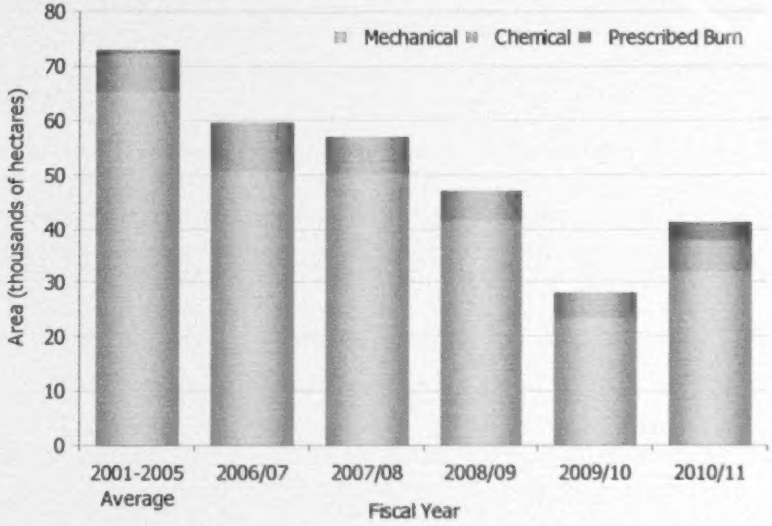
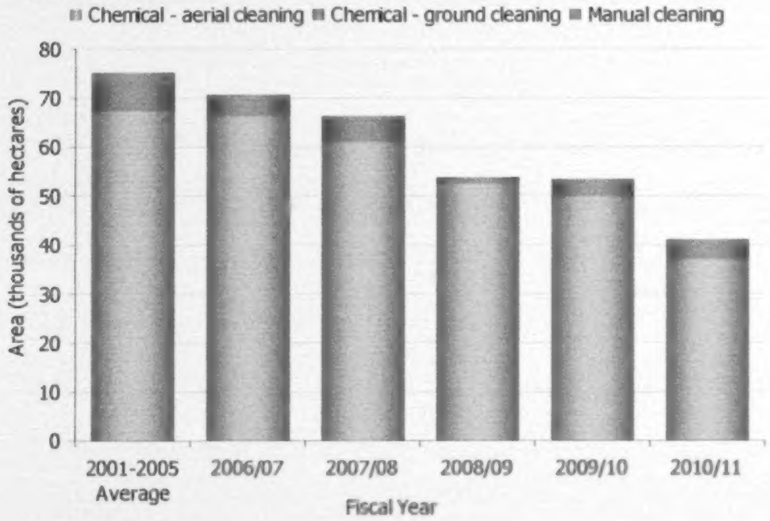


Figure 4g - Area Tended



Background

Forest Renewal and Tending Activities

The CFSA requires forest managers to carry out renewal and maintenance activities on harvested areas to provide for the sustainability of Crown forests. Tending activities are carried out to improve the survival, growth, composition or quality of a regenerating forest, and protection operations are undertaken to manage or prevent damage caused by forest insects and diseases.

Forest renewal follows disturbance in the life cycle of a forest. Whether a forest is disturbed by natural means (e.g. fire, insects) or through harvest activities, a new forest begins to develop almost immediately following the disturbance event. Forest renewal may occur through natural means or through renewal assistance (planting or seeding). Forest renewal includes a variety of activities that can take place in various combinations and are specified in approved FMPs.

Planting and seeding are the two most common types of assisted regeneration. Seeding may be carried out directly from aircraft or by seeders on the ground. The regeneration establishment period, from harvest to completion of the planting or seeding, can take up to five years. Many tree species can re-establish on a site without planting or seeding. These natural regeneration processes include seeding from the adjacent forest or from cones left on site after the harvest (jack pine), suckering of stumps and roots (poplar), and continued growth of young trees remaining on the harvested area (black spruce).

The clearcut silvicultural system is the primary system used in the boreal forest of the Northeast and Northwest Regions, mainly in stands containing jack pine, black spruce, poplar and white birch. Natural regeneration using the clearcut silvicultural system can be broken down into several categories as depicted in Table 4a - Block cut, HARP/HARO, CLAAG, Strip cut and Seed Tree Cut.

Forestry Futures Project: yellow birch crop tree release

Yellow birch seedlings

Forest Renewal

Key Facts Background Data

- A block cut is the removal of the stands in a single pass or one operation and the renewal of the area left to natural means.
- HARP or HARO (harvest and regeneration program/option) occurs in uneven-aged lowland black spruce ecosystems with the objective of removing the dominant canopy and retaining trees below a set diameter limit for natural regeneration.
- CLAAG (careful logging around advanced regeneration) is an operational practice that removes the overstory while retaining and protecting the natural regeneration understory.
- A strip cut involves the removal of the stand in progressive strips or blocks in more than one operation to encourage natural regeneration, provide wildlife habitat, protect fragile sites or for aesthetic reasons.
- A seed tree cut involves the removal of all commercial trees from an area, except for a small number of seed-bearing trees left singly or in small groups for regeneration purposes.

Natural regeneration using the shelterwood silvicultural system occurs mainly in white pine and tolerant hardwood stands in the Northeast and Southern Regions. Natural regeneration under the uneven-aged selection silvicultural system is carried out in tolerant hardwood stands mainly found in the Great Lakes - St. Lawrence Forest Region. In cases where planned natural regeneration is not successful, forest managers may assist regeneration through planting or seeding.

Assisted regeneration efforts generally promote the renewal of a disturbed area by either seeding or planting. In an effort to increase regeneration success, a site preparation treatment is often completed prior to the seeding or planting operation. Site preparation is done to provide suitable soil conditions to promote seed germination and the subsequent development of a seedling, or to promote the establishment and development of a planted seedling. Site preparation can be accomplished through mechanical or chemical means, or by prescribed burning.

Tree Planting

CLAAG (aerial view)

Further treatments may be employed to assist the trees in the developing forest stand to become established. These treatments are generally referred to as tending activities and include the operations of weeding, cleaning, thinning, spacing and stand improvement. Forest tending operations are carried out to improve the survival, growth or quality of a regenerating forest.

Protection

Forests are protected from a number of threats in order to maintain their benefits to the environment and society. These threats include insects, disease, extreme weather events, forest fires and damage from foliage eating animals.

All of these threats are a natural and necessary part of the forest ecosystem and do not have a significant impact on the forest when they occur on a small scale. When they occur over large areas or in very valuable stands, they can have a serious negative impact on the productivity of the managed forest. In these situations, some form of protection may be required.

Protection from these natural threats can be provided through appropriate planning and silvicultural practices. For example, regenerating forests with a mixture of species using genetically-superior seedlings and maintaining optimum spacing can help reduce the impact of insects and disease.

Fire is an important component of forest ecosystems. Forest fire suppression protects human life, private property and large financial investments. Fires in more remote areas are assessed for their risks to these values. If the risk to these values is significant, then fire protection measures are undertaken. Otherwise, nature is allowed to run its course. Other protection activities that occur in Ontario's forests include activities to manage insect or disease outbreaks such as spraying affected areas or harvesting affected trees.

Natural white pine regeneration

Forest protection operations

Harvest Licence System

Ontario's Crown forests are harvested by companies or individuals that hold one of two types of licences - Sustainable Forest Licences or Forest Resource Licences. Among other requirements, an SFL requires the licensee to prepare forest management plans following the direction of the Forest Management Planning Manual for Ontario's Crown Forests. The licensee is responsible for implementing forest management plans by carrying out access, harvest, renewal and maintenance activities. The SFL holder must follow the rules and guidelines set by the MNR to ensure sustainable forest management.

FRL holders follow forest management plans approved by the MNR and must operate to ensure the long-term health of the forest. Issuance of FRLs on lands under a SFL require an overlapping agreement with the holder of the SFL. An overlapping agreement normally contains terms and conditions that companies require for conducting day to day business. The agreements also contain legal requirements. This licence type is commonly referred to as an overlapping FRL.

Ontario's Stumpage System

The Government of Ontario receives direct payments from the forest industry in the form of stumpage fees and indirect revenue from taxes. Forest companies pay a stumpage fee to the Crown for every cubic metre of timber harvested. A market-based pricing system is used by the MNR to calculate the stumpage fees that companies and individuals pay for harvesting timber from Crown land. In times of strong market prices for forest products, the stumpage system triggers higher fees. In poor markets, harvesters pay lower fees. The Crown's stumpage fees are comprised of three separate charges.

CAT
STAY BACK 300 FEET
CAT 501

Hardwood selection harvesting

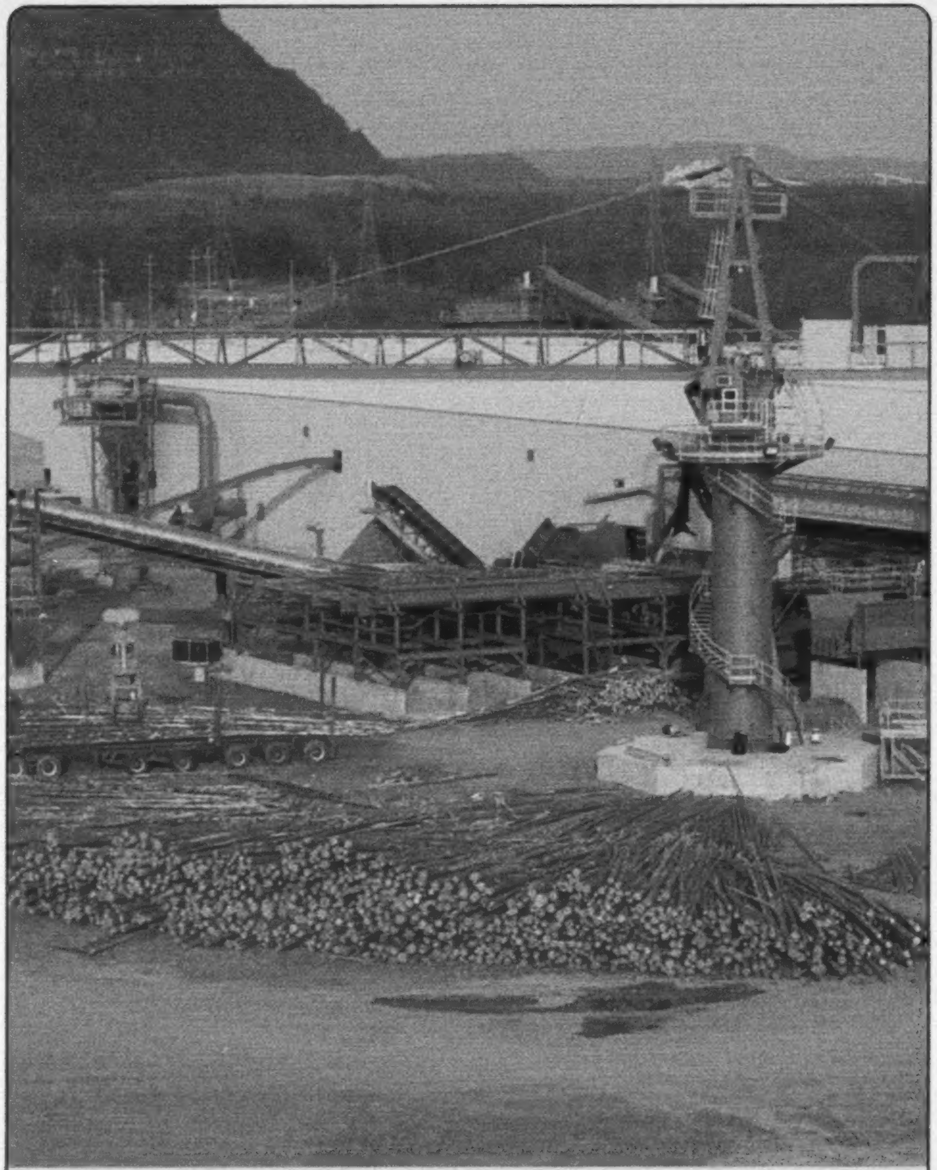
The price charged pursuant to Section 31 of the CFSA consists of four components:

- A minimum charge per cubic metre of harvested timber, depending on the species, quality and usage (for instance, pulp versus veneer) of the wood. This charge, which is adjusted annually, provides a minimum royalty to the province for the use of Crown wood;
- A residual value component which is an amount that varies depending on the market price of wood products. This amount supplements the minimum royalty to the province for the use of Crown wood.
- A forest renewal charge levied pursuant to subsection 49 (1) of the CFSA to provide funding for forest regeneration. This charge varies depending on the tree species and the anticipated forest renewal cost.
- A Forestry Futures charge levied pursuant to subsection 51 (5) of the CFSA. It is applied at $0.48 per cubic metre of timber harvested.

Provincial Wood Supply Competitive Process (WSCP)

The goal of the Wood Supply Competitive Process was to attract new investment in the forest sector, support new and innovative ventures to stimulate Ontario's economy and build an industry of top performers - both existing and new. It was open to any proponent interested in using Crown wood and investing in Ontario. Proponents could include existing or idled forest companies seeking to expand or reopen their facilities. Launched in 2009, the WSCP included unused merchantable and unmerchantable (undersize and defect material) wood from across Ontario; wood that was approved in forest management plans and not being utilized.

The ministry received 115 project proposals. All proposals were evaluated against pre-established criteria including financing, economic viability, operating feasibility, wood supply, Aboriginal benefits, management experience, and social, economic and environmental benefits. As of March 31, 2011, 35 successful proponents were selected and offered a total of 4,388,400 cubic metres of wood supply.



Thunder Bay Mill

Overview

Condition 34 of the Declaration Order regarding the MNR's Class EA Approval for Forest Management in Ontario requires district managers to conduct negotiations at the local level with Aboriginal peoples whose communities are situated in a management unit. These negotiations are to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits provided through the forest management planning process and implementation. The negotiations include but are not limited to the following matters:

- Providing job opportunities and income associated with forest and mill operations in the vicinity of Aboriginal communities;
- Supplying wood fibre to wood processing facilities (such as sawmills) in Aboriginal communities;
- Facilitating Aboriginal third-party licence negotiations with existing licensees where opportunities exist;
- Providing forest resource licences to Aboriginal people where unallocated Crown timber exists close to reserves;
- Developing programs to provide jobs, training and income for Aboriginal people in forest management operations through joint projects with Indian and Northern Affairs Canada; and
- Identifying other forest resources that may be affected by forest management or which can be addressed in the forest management planning process.

For the purposes of this section, use of the term "Aboriginal" will be used to include references to "First Nations" and "Native" as per the definition in the Canadian Constitution 35(2), unless quoted directly from a source or in the use of a proper name.

A list of the Aboriginal communities situated within each district is summarized in Table 7a.

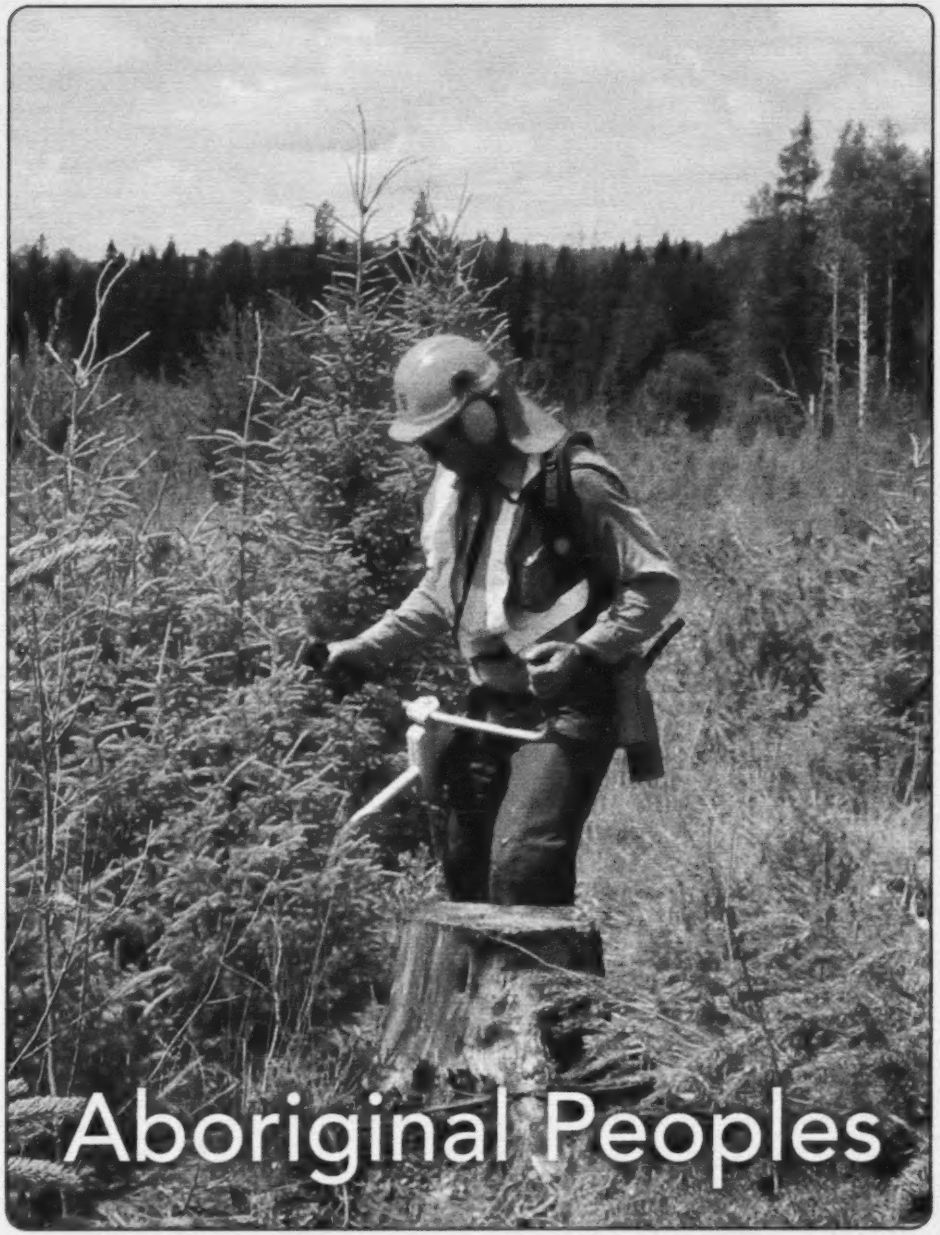


Table 7a – Summary of Aboriginal communities in each District.

District	Aboriginal Communities
Algonquin Park	Antoine Algonquins, Mattawa/North Bay Algonquins, Bonnechere Algonquin First Nation, Whitney Algonquins, Algonquins of Greater Golden Lake, Algonquins of Pikwakanagan First Nation (Golden Lake), Snimikobi (Ardoch) Algonquin First Nation, Algonquin Nation Kijicho Manito (Bancroft), Shabot Obaadjiwan First Nation
Bancroft, Kemptville & Peterborough	Whitney Algonquins, Snimikobi (Ardoch) Algonquin First Nation, Alderville First Nation, Curve Lake First Nation, Mohawks of the Bay of Quinte, Ojibways of Hiawatha First Nation, Algonquins of Pikwakanagan First Nation (Golden Lake), Shabot Obaadjiwan First Nation, Bonnechere Algonquin First Nation, Algonquins of Greater Golden Lake, Algonquin Nation Kijicho Manito (Bancroft), Chippewas of Rama Mnjikaning First Nation, Kawartha Nishnawbe First Nation
Chapleau	Brunswick House First Nation, Chapleau Cree First Nation, Chapleau Ojibwe First Nation, Mattagami First Nation, Michipicoten First Nation, Missanabie Cree First Nation, Flying Post First Nation, Mississauga #8 First Nation, Sagamok Anishnawbek First Nation, Serpent River First Nation
Cochrane	Moose Cree First Nation, Wahgoshig First Nation, Taykwa Tagamou Nation, Mattagami First Nation, Matachewan First Nation, Flying Post First Nation
Dryden	Aboriginal People of Wabigoon, Eagle Lake First Nation, Lac Des Mille Lacs First Nation, Lac Seul First Nation, Ojibway Nation of Saugeen, Wabauskang First Nation, Wabigoon Lake Ojibway Nation, Naotkamegwanning Anishinabe First Nation (Whitefish Bay), Grassy Narrows First Nation
Fort Frances	Big Grassy First Nation, Couchiching First Nation, Lac La Croix First Nation, Rainy River First Nation, Naicatchewenin First Nation, Seine River First Nation, Stanjikoming First Nation, Nigigoonsiminikaaning First Nation, Anishinaabeg of Naongashiing (Big Island), Naotkamegwanning Anishinabe (Whitefish Bay), Ojibways of Onigaming (Sabaskong), Lac Des Mille Lacs First Nation, Wabigoon Lake Ojibway Nation, Metis community
Hearst	Constance Lake First Nation, Hornepayne First Nation, Taykwa Tagamou Nation, Moose Cree First Nation, Brunswick House First Nation, Chapleau Cree First Nation, Mattagami First Nation, Missanabie Cree First Nation, Flying Post First Nation, Matachewan First Nation
Kenora	Big Grassy First Nation, Wabauskang First Nation, Grassy Narrows First Nation, Iskatewizaagegan No. 39 Independent First Nation, Wabaseemoong Independent Nations (Whitedog), Obashkaandagaang (Washagamis Bay), Ochiichagwe'Babigo'ining First Nation (Dalles), Wauzhushk Onigum First Nation (Rat Portage), Shoal Lake No. 40 First Nation, Northwest Angle No. 33 First Nation, Northwest Angle No. 37 First Nation, Anishinaabeg of Naongashiing (Big Island), Ojibways of Onigaming (Sabaskong), Naotkamegwanning Anishinabe (Whitefish Bay)
Kirkland Lake	Wahgoshig First Nation, Matachewan First Nation, Beaverhouse First Nation
Nipigon	Biinjitiwaabik Zaaging Anishinaabek First Nation (Rocky Bay), Kiashke Zaaging Anishinaabek First Nation (Gull Bay), Red Rock Indian Band, Bingwi Neyaashi Anishinaabek, Fort William First Nation, Whitesand First Nation, Namaygoosisagagun (Community of Collins), Animbiigoo Zaagi'igan Anishinaabek First Nation (Lake Nipigon Ojibway), Aroland First Nation, Long Lake #58 First Nation, Ginoogaming First Nation (Long Lac #77), Constance Lake First Nation, Pays Plat First Nation, Poplar Point First Nation, Eabametoong First Nation, Marten Falls First Nation, Ojibways of Pic River (Heron Bay), Pic Mobert First Nation

District	Aboriginal Communities
North Bay	Temagami First Nation, Nipissing First Nation, Dokis First Nation, Antoine Algonquins, Mattawa/North Bay Algonquins, Matachewan First Nation
Parry Sound	Wasauksing First Nation (Parry Island), Henvey Inlet First Nation, Shawanaga First Nation, Magnetawan First Nation, Dokis First Nation, Wahta Mohawks, Moose Deer Point First Nation
Pembroke	Algonquins of Pikwakanagan First Nation (Golden Lake), Bonnechere Algonquin First Nation, Antoine Algonquins, Mattawa/North Bay Algonquins, Algonquins of Greater Golden Lake, Snimikobi (Ardoch) Algonquin First Nation, Algonquin Nation Kijicho Manito (Bancroft), Shabot Obaadjiwan First Nation, Whitney Algonquins
Red Lake	Pikangikum First Nation, Lac Seul First Nation, Cat Lake First Nation, Wabauskang First Nation, Slate Falls First Nation, Grassy Narrows First Nation, First Nation people living off reserves in the communities of Red Lake and Ear Falls
Sault Ste. Marie	Serpent River First Nation, Ojibways of Garden River, Mississauga #8 First Nation, Thessalon First Nation, Ojibways of Batchewana, Métis Nation of Ontario
Sioux Lookout	Mishkeegogamang First Nation, Lac Seul First Nation, Cat Lake First Nation, Ojibway Nation of Saugeen, Slate Falls First Nation
Sudbury	Dokis First Nation, Henvey Inlet First Nation, Mattagami First Nation, Chapleau Ojibwe First Nation, Mississauga #8 First Nation, Sagamok Anishnawbek First Nation, Serpent River First Nation, Temagami First Nation, Wahnapitae First Nation, Whitefish Lake First Nation, Whitefish River First Nation, Wikwemikong Unceded Indian Reserve, Zhiibaahaasing First Nation, Sheguiandah First Nation, Aundek Omni Kaning First Nation (Ojibways of Sucker Creek), M'Chigeeng First Nation (West Bay), Sheshegwaning First Nation, Brunswick House First Nation
Thunder Bay	Whitesand First Nation, Namaygoosisagagun (Community of Collins), Lac Des Mille Lacs First Nation, Fort William First Nation, Kiashke Zaaging Anishinaabek First Nation (Gull Bay), Red Rock Indian Band, Métis Nation of Ontario
Timmins	Mattagami First Nation, Flying Post First Nation, Matachewan First Nation, Moose Cree First Nation, Taykwa Tagamou Nation, Wahgoshig First Nation, Beaverhouse Aboriginal Community, Wahnapitae First Nation, Sagamok Anishnawbek First Nation, Whitefish Lake First Nation, Temagami First Nation, Temiskaming First Nation
Wawa	Ojibways of Pic River (Heron Bay), Pic Mobert First Nation, Hornepayne First Nation, Michipicoten First Nation, Missanabie Cree First Nation, Pays Plat First Nation, Long Lake #58 First Nation, Ginoogaming First Nation (Long Lac #77), Constance Lake First Nation

Source: Condition 34 District Reports

Implementation of Condition 34

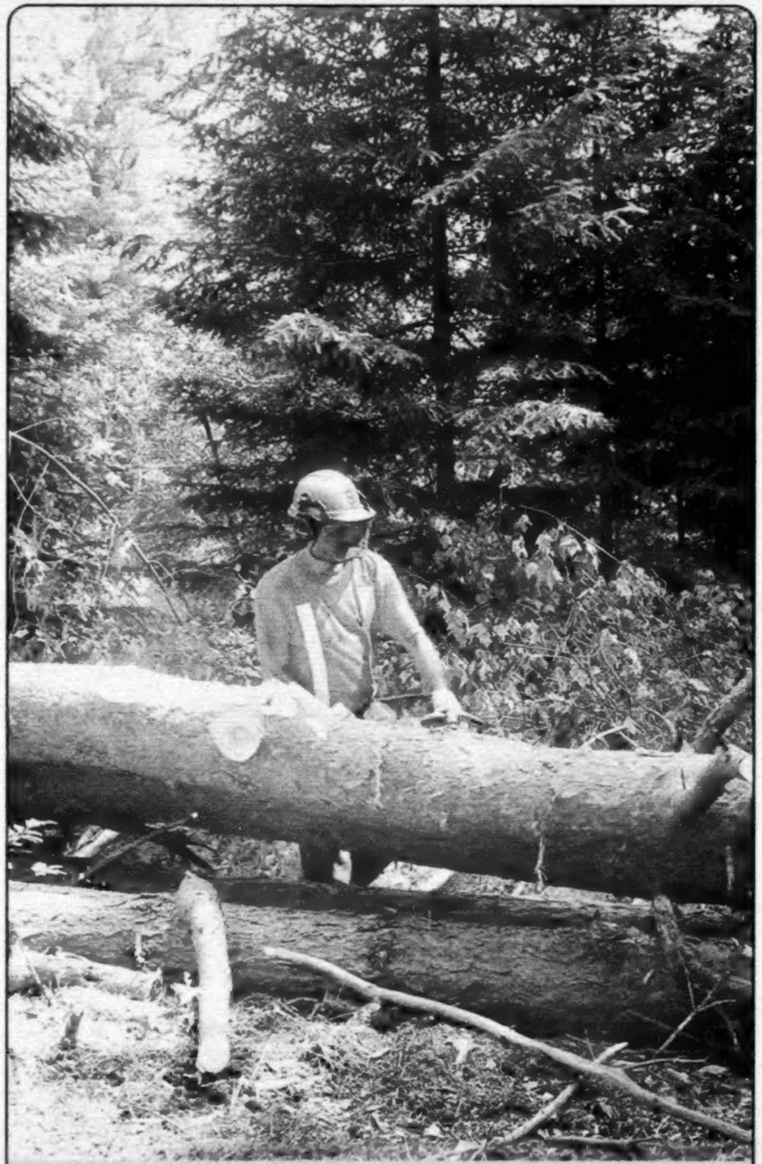
The scope of Condition 34 is broad, and its application and implementation are determined at the local level. Arrangements and agreements put into effect by MNR district managers and Aboriginal communities take different forms and attempt to accommodate the unique needs, capacities, and situations of individual Aboriginal communities. In its decision, the EA Board ordered the MNR to build upon initiatives already underway, and to provide new opportunities for Aboriginal communities to benefit from forest management activities in their local areas. The CFSA provides legislative authority to the MNR, as well as a framework for the sustainable management and use of forest resources.

While responsibility for implementation of Condition 34 rests with the MNR, the EA Board recognized that the involvement of other parties is critical to successful implementation. Such involvement would include participation of Aboriginal communities, the forest industry, and other government bodies (e.g., Indian and Northern Affairs Canada, and Natural Resources Canada). Aboriginal communities may be individually involved in implementation of Condition 34, or as members of groups of communities with common interests situated in a common geographic area.

District Progress

The MNR is required to report on the progress of ongoing negotiations with Aboriginal peoples on a district-by-district basis. Of the 26 MNR districts, four are outside the AOU- Aylmer, Aurora, Cambridge, and Midhurst. Peterborough and Kemptville districts are only partially included in the AOU. Accordingly, the reporting of Bancroft in this chapter will include parts of Peterborough and Kemptville districts located in the Mazinaw-Lanark Forest.

Highlights of benefits to Aboriginal communities through participation in forest management and economic development activities is summarized under three categories: access to resources, silvicultural opportunities, and training and development. Information for this summary is from district-submitted Condition 34 reports.



Forest Harvesting

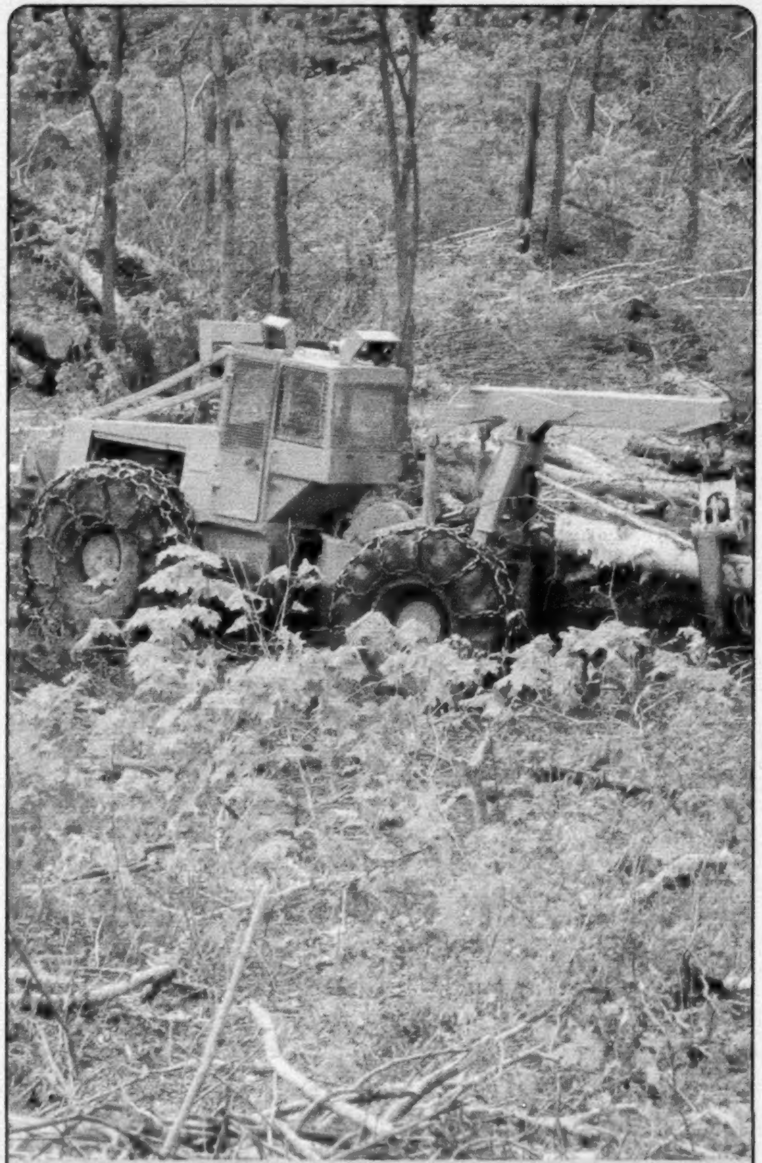
Access to Resources

The MNR has helped the forest industry and Aboriginal communities negotiate access to resources through various mechanisms. For example, harvest opportunities have been made available through overlapping licences issued to Aboriginal communities or community members at the district level.

Table 7b - Aboriginal access to resources - 2010/11

District	Tenure type	Estimated Total[1] Allocation (000 cubic metres)	Number of Aboriginal Communities Affected
Algonquin Park	Contract	57.9	1
Chapleau	Conditional Commitment	60.0	1
Cochrane	Contract, Licence	400.7	3
Dryden	Licence	15.1	2
Fort Frances	Contract, Licence	541.5	8
Hearst	Contract, Licence	102.2	2
Kenora	Licence	186	3
Kirkland Lake	Contract, Licence	13.1	2
Nipigon	Contract, Licence	639.8	8
North Bay	Licence	26.4	2
Pembroke	Licence	5.9	1
Red Lake	Licence	26.2	1
Sault Ste. Marie	Conditional Commitment	30.0	3
Sioux Lookout	Allocation	n/a	1
Sudbury	Licence	174.6	3
Thunder Bay	Licence	308.1	4
Timmins	Licence	n/a	1
Wawa	Licence	41.8	2

[1] For various districts the estimated total allocation and/or harvest volume was not provided for some Aboriginal communities, also additional opportunities may have been undertaken but not included in summary.



N'swakamoks First Nation operation

Overview

Silvicultural Opportunities

Forest renewal and tending includes growing nursery stock, planting, seeding, spacing, cleaning, thinning, and site preparation. Many Aboriginal peoples have experience in these silvicultural activities.

District managers have sought specific agreements between the forest industry and Aboriginal communities for silvicultural contract work. Other key forest management activities, such as wood hauling, road construction and maintenance, and information gathering are also provided in Table 7c.

Training and Employment

District managers have found ways to help co-ordinate existing federal and provincial programs to assist Aboriginal communities in preparing for increased participation in forest management activities.

In some districts, the forest industry provides the training strategy, recruitment and hiring support, and business opportunities for independent contractors. In some instances the MNR helps to foster Aboriginal training by providing funding, facilities or equipment. Sometimes districts provide direct training services, or leadership to training initiatives. The following summarizes training opportunities provided to Aboriginal communities by the MNR and the forest industry. Relevant districts are noted as appropriate.

Table 7c - Aboriginal access to silvicultural contracts and other opportunities - 2010/11

District[1]	Estimated Size of Contracts / Opportunities	Number of Communities Affected	Types of Activities
	Industry & MNR		
Algonquin Park	920ha 146ha 392ha	9	Tree marking Hardwood Stand improvement Manual Cleaning and Pre-Commercial Thinning
Chapleau	n/a	2	Aboriginal Values Mapping Session
Dryden	4.5M seedlings	1	Seedling Production and cleaning supplies purchased
Fort Frances	$105K $66K $920K $60K	6	Tree planting, cone collection, thinning Forest management services Road construction and maintenance Water crossing inspections
Hearst	Unknown	1	Road construction activities
Kirkland Lake	51ha	1	Pre-commercial thinning
Nipigon	Unknown	2	Road maintenance, construction and site preparation activities
North Bay	$349K	3	Tree planting, manual tending, site preparation, slash pile abatement, and thinning
Parry Sound	$21.5K	2	Tree Inventory Project (MTO Hwy69 Expansion)
Pembroke	$5k $1.6K	2	Support for Earthwalker program Tree Marking Training
Sault Ste. Marie	366K seedlings	1	Seedling production and Cone Collection
Sioux Lookout	n/a	1	Road maintenance and construction
Sudbury	272ha/$142K	2	Pre-commercial thinning
Thunder Bay	$691k $21K	2	Road construction/maintenance Reforestation activities

Summary of Training Initiatives - 2010/11

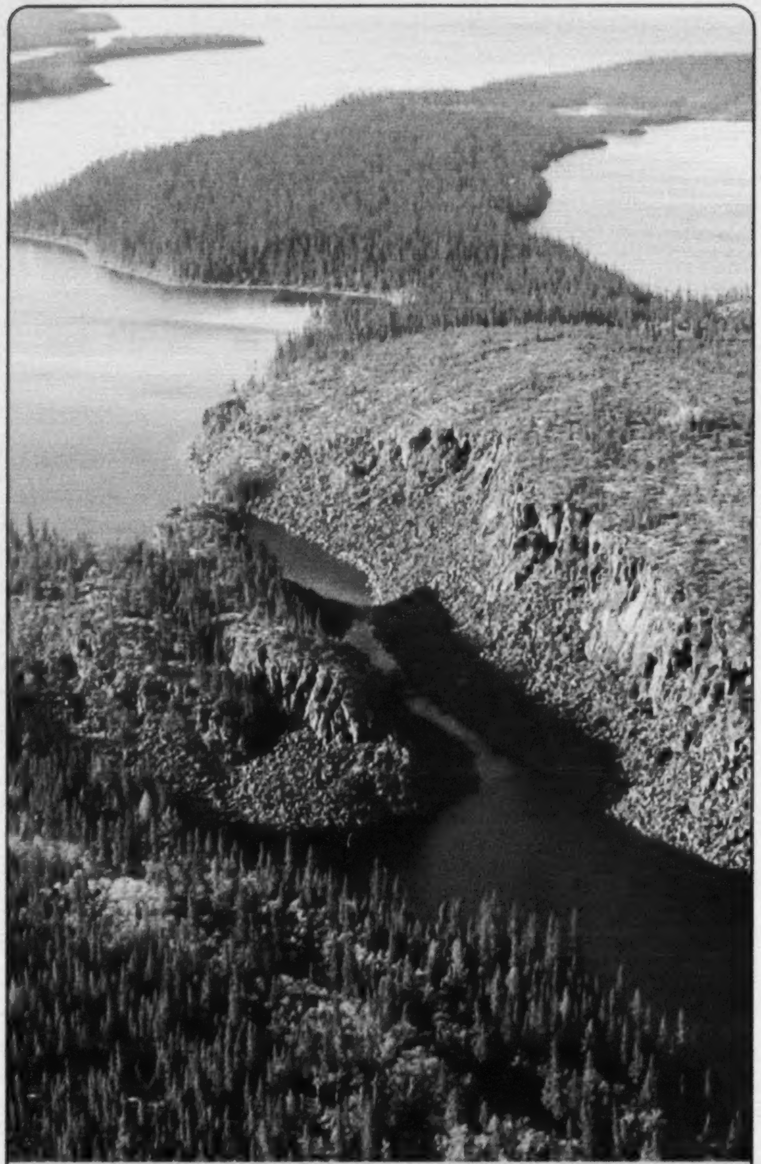
A range of forest-related training and development initiatives were provided for the benefit of Aboriginal people. Opportunities were presented in a few larger, comprehensive programs, as well as in a multitude of local and focused offerings. Both the MNR and the industry have offered significant support to training initiatives.

The MNR's Aboriginal Youth Work Exchange Program (AYWEP) and the First Nations Natural Resources Youth Employment Program are examples of larger, comprehensive training programs. Through the AYWEP, at least seven districts arranged (typically) eight-week summer employment for Aboriginal youth (Thunder Bay, Chapleau, Kirkland Lake, Cochrane, Dryden, Hearst and Sault Ste. Marie). AYWEP work placements focus on resource management projects, job skills readiness training and personal development training.

The First Nations Natural Resources Youth Employment Program (First Nations Ranger Program) is largely centered at Camp Firesteel, west of Upsala. The seven-week program employed 30 youth and three crew leaders in training from 10 First Nations communities in five districts (Cochrane, Dryden, Thunder Bay, Nipigon and Sioux Lookout). The program is administered by Confederation College and has received support from the MNR, other ministries and government agencies and industry partners.

The most common training received by Aboriginal people is the MNR's forest management planning workshops. Workshops are offered to all planning teams at appropriate intervals in the FMP development process. As more Aboriginal people join planning teams, the benefits of this program are reaching more communities.

Forest industry partners and SFL companies actively engaged in supporting training programs for youth and other groups. Industry members often have policies and agreements to document their ongoing commitment to youth training and education. Other examples of youth training include the MNR and industry supported Algonquin Earthwalker Program (now in its sixth year) in association with the Ontario Stewardship Rangers program (Pembroke); and the First Nations Juvenile Spacing Training and Employment Program which provided 12 weeks of work to 11 workers and six supervisors from six communities on or adjacent to AbiBow's limits near Thunder Bay.

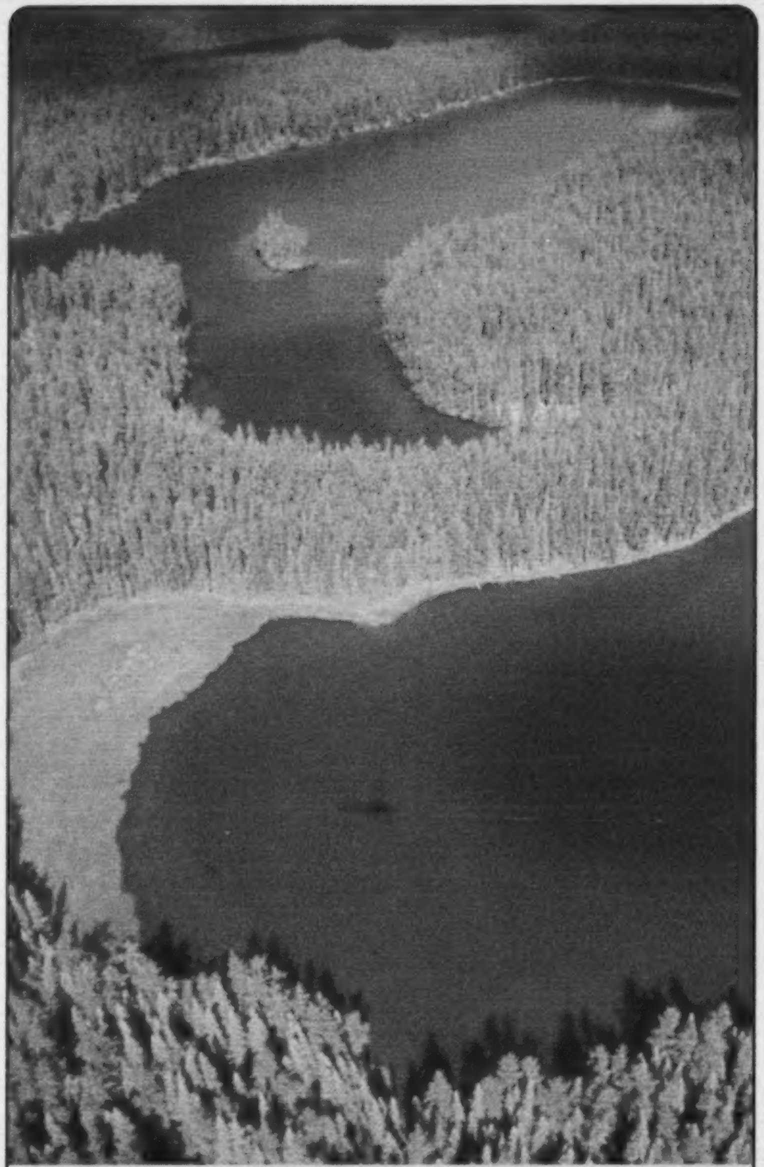


Throat Lake

Aboriginal Peoples

The MNR and industry also offered or supported many other training initiatives. Examples include:

- MNR contribution to the Board of Directors of Whitefeather Aboriginal Skills and Education Program (ASEP) initiative. One objective of ASEP is to educate Pikangikum First Nation youth under a recognized college forestry education program (Red Lake);
- Whitefeather Forest Management Corporation, in partnership with Confederation College have collaborated to facilitate a Forest Ecosystem Technician program (Red Lk);
- Westwind Forest Stewardship provided Global Positioning System (GPS), tree identification and inventory training to two First Nation communities (Parry Sound);
- MNR staff worked with two First Nation communities to provide Geographic information System (GIS) support for system setup and access to MNR values information. SFL staff supported and sponsored a youth and elders gathering for Michipicoten First Nation (Sault Ste. Marie);
- MNR provided training to Chapleau Aboriginal Resource Team on; Heritage Assessment Tool training, harvesting options around waterbodies, and herbicide field tour (Chapleau);
- Tembec supported two Mushkegowuk Environmental Research Centre training sessions with aboriginal community involvement, including sessions on FSC certification, high conservation values, forest tenure and forest biomass (Chapleau);
- Ontario Parks sponsored Algonquins to attend Provincial Scaling and Tree Marking courses (Algonquin Park);
- MNR supported Mattagami in the development of a Trapper's Council to develop a management system and to repatriate traditional traplines in the community (Timmins);
- MNR supported chainsaw training for Algonquins of Pikwakanagan reserve (Bancroft);
- The Algonquin Forestry Authority advised communities of ongoing training opportunities, and offered to sponsor two individuals from each community (Algonquin Park);
- Weyerhaeuser, in partnership with Moncreif Construction provided forest harvest and equipment operation training for community members of Wabaseemoong and Whitefish Bay First Nations (Kenora); and
- MNR supported training and development between Whitesand First Nation and the Ministry of Training, Colleges and Universities (Kenora).



Near Bow Lake First Nations

Aboriginal Employment in the Forest Industry

In 2010/11, participation levels of Aboriginal people working in all aspects of forest management varied, largely due to a reduction in the forest industry as a result of market conditions. It is clear from district information that Aboriginal people were engaged in harvesting, as well as silvicultural and other activities. Aboriginal people were also employed at forest resource processing facilities (mills).

The characteristics of Aboriginal employment in the forest industry vary widely. While some work is permanent full-time, many of the employment opportunities are seasonal or part-time. Work relationships also vary, from individuals serving as regular employees of forest industry businesses (e.g., mill workers), to self-employed individuals performing tasks on a casual, intermittent basis (e.g., road and culvert maintenance). Business entities established may be affiliated directly with Aboriginal communities, may be run by individuals who are members of an Aboriginal community, or may be operated by non-Aboriginal parties.

Significant Aboriginal Employment in the Forest Industry - 2010/11

Tables 7b and 7c outline specific opportunities for Aboriginal access to resources and silviculture programs in Ontario during the 2010/11 period. Additional employment opportunities in forest industry mills are highlighted below (District indicated);

- AbiBow has a long-term lease with Fort William First Nation for the sawmill site and building which are located in the First Nations industrial park and 30-50 Aboriginal people are employed at the sawmill (Thunder Bay);
- Tembec employed eight individuals at the Kapuskasing mill complex and eight chip trucks from Constance Lake First Nation company (Hearst);
- An estimated 35 individuals were employed at AbiBow's Fort Frances mill (Fort Frances), and Aboriginal peoples were engaged in hauling forest products, road construction and maintenance, site preparation, values collection and compliance.

Districts are in many cases able to report or estimate how many individuals are engaged in particular activities or contracts, but typically do not have access to information on employment numbers in other activities. Some districts have been able to provide estimates of total numbers of

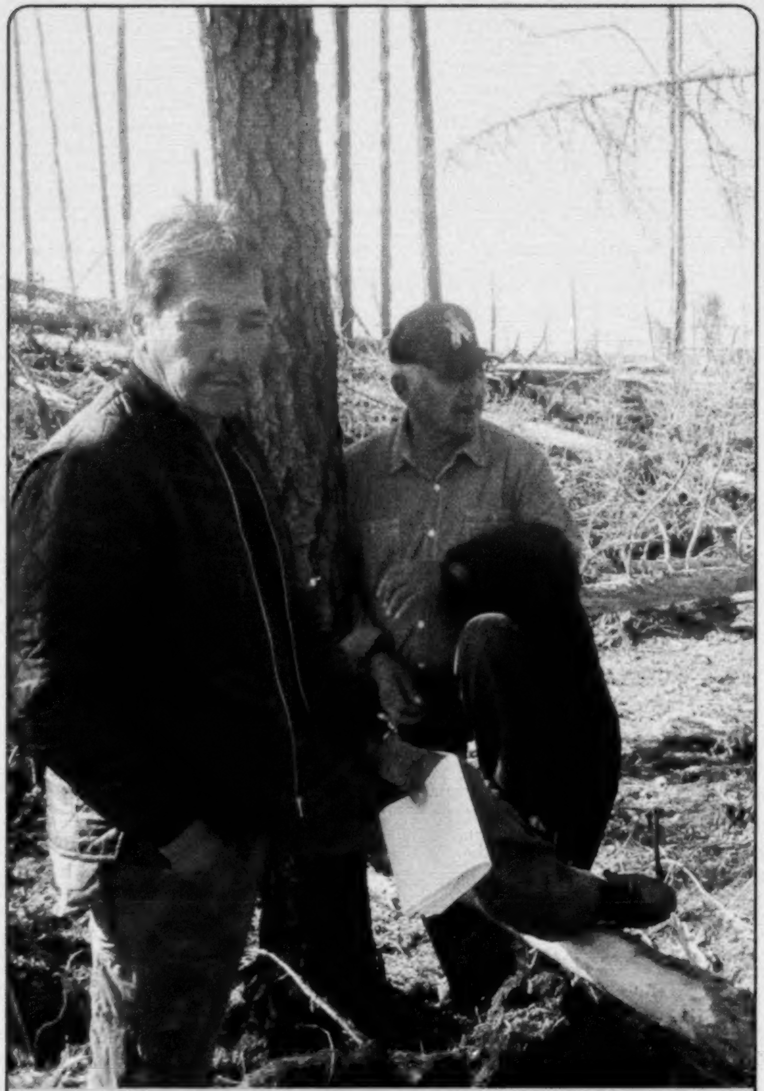
Fighting a Forest Fire

Aboriginal people employed by the industry in the district. However, in many instances, data are incomplete on the overall numbers of Aboriginal people engaged in work in the forest industry.

Role in Planning and Management

In addition to efforts to achieve a more equal participation by Aboriginal peoples in the benefits of the forest management planning process, MNR districts seek effective forums for Aboriginal communities to have a greater say in the planning and management of forest resources. Forest Management Plans include a detailed Aboriginal Background Information Report and maps of Aboriginal Values. The Aboriginal Background Information Report summarizes the locations of natural resource features, land uses and values of interest to the Aboriginal communities, and forest management-related concerns of the communities. Districts have provided financial assistance to some communities to prepare these components or to hire outside contractors.

In many districts Aboriginal peoples are represented, together with industry and government, on forest management planning teams. Aboriginal members also often serve on local citizens committees (LCC). Table 7d summarizes Aboriginal community involvement in forest management planning for each district. In some cases specific communities are represented on more than one LCC or planning team in a district; and are counted separately in this report.



Pikangikum Elders involvement with prescribed burn in the Whitefeather Forest

Table 7d - Aboriginal engagement in forest management planning processes - 2010/11

District	Aboriginal Communities Represented on LCCs		Aboriginal Communities Represented on Planning Teams		Aboriginal Background Information Reports on File for a Forest
	Active Member	Non active Member	Active Member	Non active Member	
Algonquin Park	1	0	9	0	5
Bancroft	1	0	4	2	5
Chapleau	0	0	7	3	16
Cochrane	0	0	5	0	2
Dryden	1	0	7	1	11
Fort Frances	1	0	2	0	15
Hearst	0	0	6	0	11
Kenora	0	0	2	4	Not reported
Kirkland Lake	3	0	5	0	5
Nipigon	7	1	12	5	23
North Bay	6	0	6	0	6
Parry Sound	0	1	0	2	5
Pembroke	1	0	8	0	6
Red Lake	0	0	3	0	6
Sault Ste. Marie	0	0	4	0	6
Sioux Lookout	1	0	2	0	5
Sudbury	1	0	5	6	9
Thunder Bay	6	2	4	3	9
Timmins	4	0	11	3	9
Wawa	7	0	4	2	11

Harvesting Canada Yew

Key Facts

This section provides information on the construction and maintenance of all forest access roads (primary, branch and operational).

Summary of Roads Funding Programs – 2010/11

- Spending for the Forest Access Capital Roads program was $3.53 million;
- MNR entered into road construction and maintenance agreements with SFL and FRL holders on 44 management units (including the Algonquin Forest Authority); and
- The forest industry incurred costs of over $81 million on the construction, re-construction, maintenance, and monitoring of primary and branch roads, and the construction/repair/replacement of stream crossings. The government's share of this work was just under $75.0 million (Table 8a). The forest industry incurred 100% of the costs of constructing and maintaining all operational roads on Crown lands.

Table 8a - Roads Funding Program 2010/11

Category	Amount
Primary Roads	$67,514,139
Branch Roads	$6,757,431
Total	$74,271,571
MNR Admin Costs	$728,429
Total Funds Spent	$75,000,000

Note: The Gordon Cosens and Wabigoon Forests did not submit information on forest roads for the 2010/11 fiscal year. All kilometre values include estimates for these forests based on the 2009/10 Annual Report.

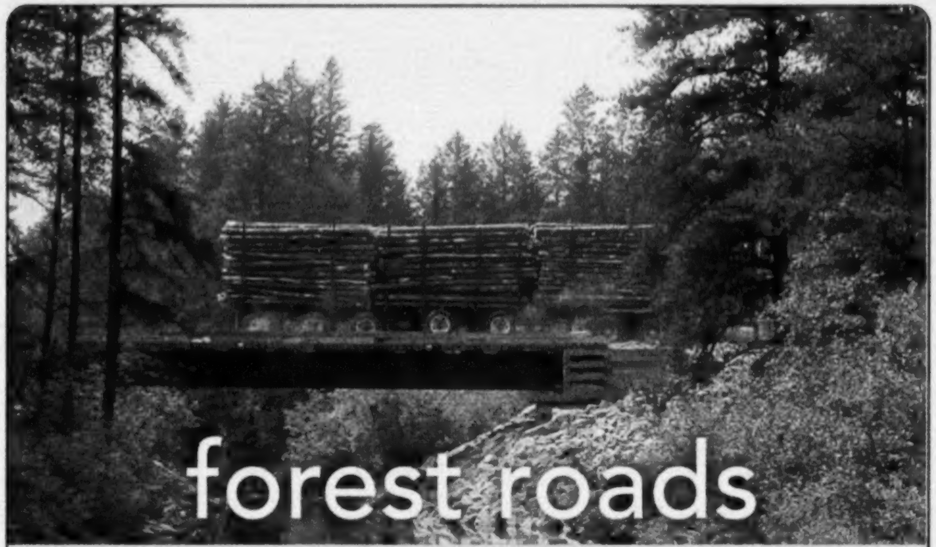
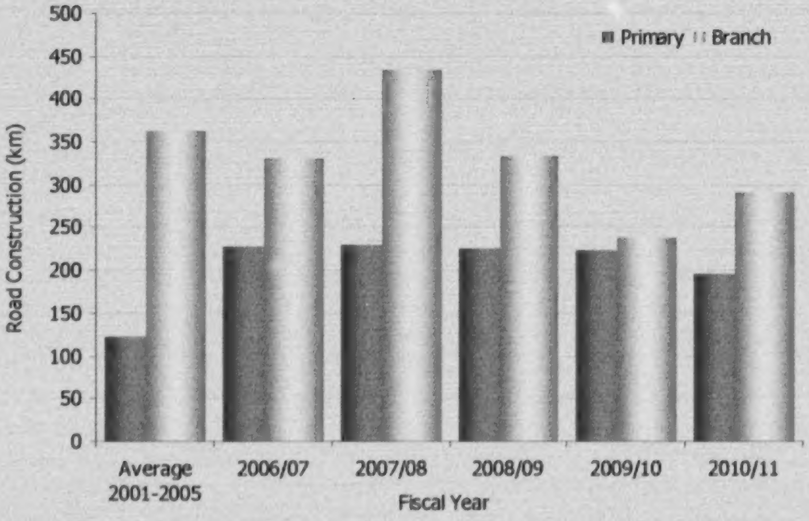


Figure 8a - Primary and Branch Road Construction by Year



Forest Roads

Key Facts Background

Summary of Road Construction, Maintenance and Use Management - 2010/11

- 3,683 kilometres of primary, branch and operational roads were constructed (Table 8b). The majority of the roads constructed during 2010/11 were operational roads; and
- 26,396 kilometres of roads were maintained, with the majority of the road maintenance activities occurring on primary roads (Figure 8b).

Summary of Road Access Control and Decommissioning - 2010/11

- 574 kilometres of primary, branch and operational roads had access controls established (Figure 8c); and
- 626 kilometres of primary, branch and operational roads were decommissioned by physical or natural means (Figure 8d).

Figure 8b - Total Road Maintenance by Road Class by Year

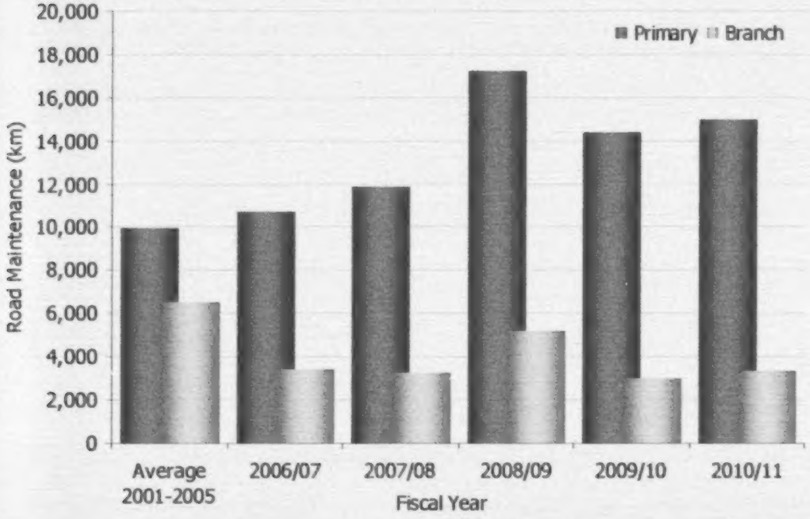


Figure 8c - Road Access Controls Established by Year

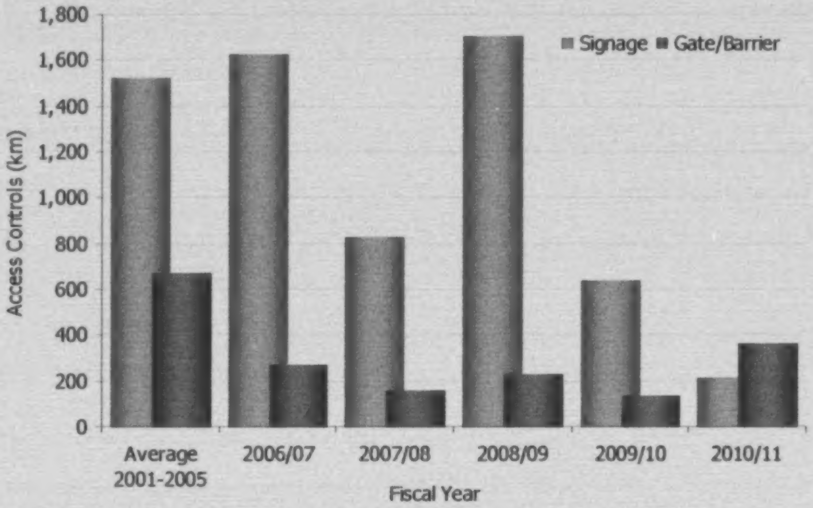
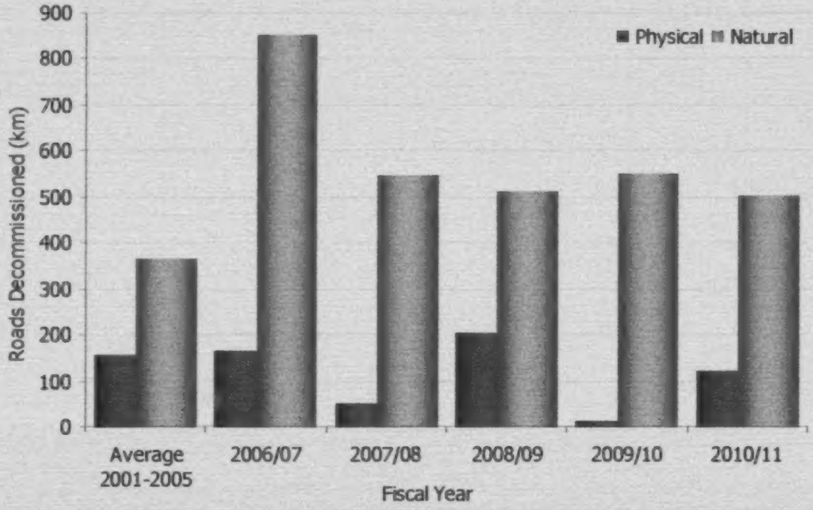


Figure 8d - Roads Decommissioned by Year



Background

Primary roads provide principal access to the management unit, and are constructed, maintained and used as the main road system. Primary roads are normally permanent roads, although there may be significant periods of time when specific primary roads are not required for forest management purposes. Branch roads connect to existing or new primary or branch roads, providing access to and through areas of operations on a management unit.

Operational roads are within areas of operations that provide short-term access for harvest, renewal and tending operations. Operational roads are normally not maintained when they are no longer required for forest management purposes, and where possible may be physically decommissioned and regenerated.

Roads Funding Programs

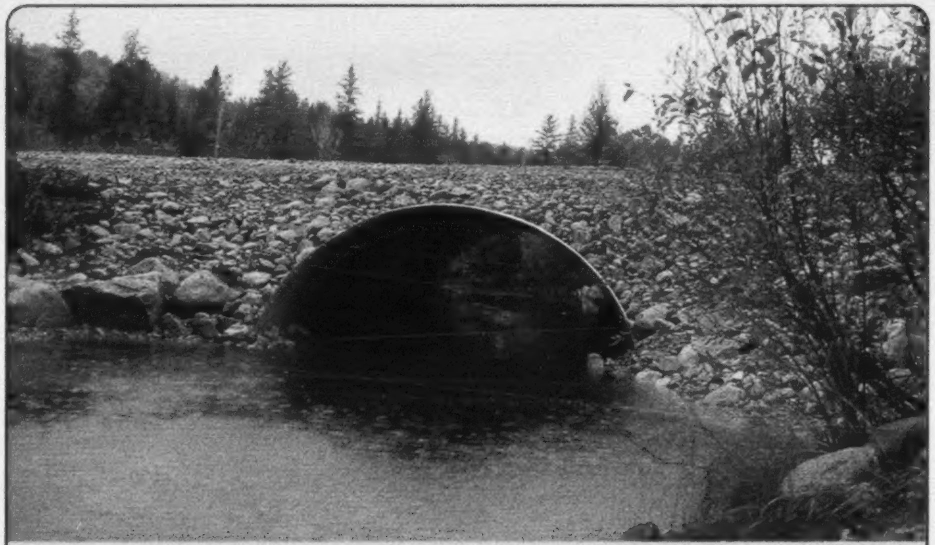
There are a number of roads funding programs available for the construction, maintenance and monitoring of forest access roads on Crown land.

Resource Access Roads Program

The Resource Access Roads Program is funded by the Ministry of Northern Development and Mines, and managed by the Ministry of Natural Resources. This program funds multi-purpose access roads that are the responsibility and liability of the Crown. Most of the road work funded serves several purposes, including public access, public safety and forest management.

Provincial Roads Funding Program

The Minister's Council Report on Forest Sector Competitiveness, released in June 2005, recommended that the provincial government assume its proportional share of the costs of building and maintaining forest access roads on Crown forests that serve multi-resource uses.



Culvert on Brook Trout Stream

Forest Access Road

The report recommended that the government cover 100% of primary road costs, and 50% of secondary road costs. As a result, in September 2005 the Minister of Natural Resources announced the Road Maintenance Funding Program; with $28 million available to the forest industry to cover the costs of maintaining primary forest access roads. In February 2006 the Premier and the Minister of Natural Resources announced an additional $47 million for the Provincial Roads Funding Program. Beginning April 1, 2006, a total of $75 million was made available annually to contribute to the expenses incurred by the forest industry to construct and maintain forest access roads.

Roads eligible for funding have to be identified as primary or branch forest access roads in approved Forest Management Plans and Annual Work Schedules, be located on Crown land, and not be limited in use. These forest access roads benefit not only the forest industry, but also many other users, including: mining companies, tourism operators, Aboriginal communities, utility and railway companies, hunters, anglers, campers, trappers, cottagers, and the general public. These roads also provide part of the rural infrastructure for emergency preparedness and response.

Road Access Control and Decommissioning

For reasons of public safety and/or resource management, forest access roads may be closed to certain uses on a temporary, seasonal, or permanent basis. Methods used to control or limit access can be classified into two categories: signage- erecting signs to advise the public of the restriction; or physical barrier- installing gates or using other physical means such as ditching. Decommissioning of roads may be accomplished by physical means (ditching, culvert or bridge removal, berming and scarification), or roads may be left to deteriorate naturally. Operational roads may be constructed and decommissioned in the same year. Road access control and decommissioning must be planned in advance of construction, and documented in the FMP for each management unit. These activities must also be reported in the management unit annual report.

Road Construction

Road Construction

Key Facts Background Data

Data

Table 8b - Total Road Construction by Road Class by Year (km)

Road Class	Average 2001-2005	2006/07	2007/08	2008/09	2009/10	2010/11
Primary	121	229	229	226	224	197
Branch	364	332	435	334	238	291
Total	485	561	664	560	462	487
Operational	n/a	5,482	4,208	3,450	2,756	3,196

Table 8c - Total Road Maintenance by Road Class by Year (km)

Road Class[1]	Average 2001-2005	2006/07	2007/08	2008/09	2009/10	2010/11
Primary	9,985	10,749	11,916	17,250	14,400	14,982
Branch	6,508	3,444	3,247	5,172	2,990	3,339
Operational and Existing	n/a	6,724	5,460	5,283	7,284	8,076
Total	16,493	20,917	20,623	27,705	24,673	26,396

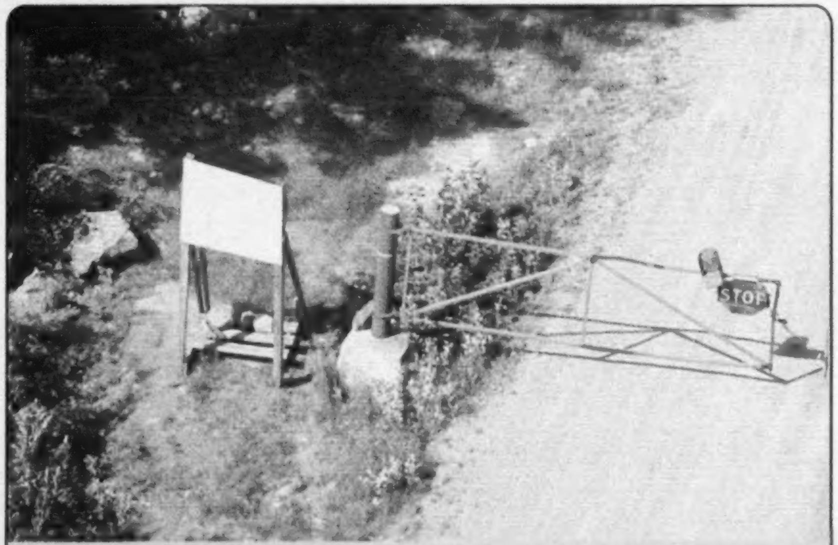
Table 8d - Road Access Controls Established by Year (km)

Access Control Type	Average 2001-2005	2006/07	2007/08	2008/09	2009/10	2010/11
Signage	1,521	1,625	828	1,709	638	211
Gate/Barrier	675	269	159	229	131	363
Total	2,196	1,894	987	1,938	769	574

Table 8e - Roads Decommissioned by Year (km)

Decommision Type	Average 2001-2005	2006/07	2007/08	2008/09	2009/10	2010/11
Physical	156	165	49	206	13	121
Natural	364	852	548	511	549	505
Total	520	1,017	597	717	562	626

Bridge Construction



Access Control

Table 8f - 2010/11 Roads Funding Program

	Total Road Program Reimbursement		
Management Unit	Primary Roads	Branch Roads	Total
Abitibi River Forest	$3,901,981	$324,380	$4,226,361
Algoma Forest	$1,365,216	$42,970	$1,408,187
Algonquin Park Forest	$1,695,208	$332,373	$2,027,582
Armstrong Forest	$559,528	$0	$559,528
Bancroft-Minden Forest	$556,629	$184,731	$741,360
Big Pic Forest	$1,552,581	$45,945	$1,598,527
Black River Forest	$496,459	$23,876	$520,335
Black Sturgeon Forest	$743,962	$331,219	$1,075,181
Caribou Forest	$1,041,613	$116,194	$1,157,807
Crossroute Forest	$4,069,705	$1,027,070	$5,096,776
Dog River-Matawin Forest	$2,526,930	$558,938	$3,085,868
Dryden Forest	$659,469	$36,384	$695,853
English River Forest	$2,173,411	$160,471	$2,333,882
French Severn Forest	$648,397	$106,260	$754,658
Gordon Cosens Forest	$3,788,631	$773,839	$4,562,470
Hearst Forest	$1,589,701	$152,535	$1,742,236
Kenogami Forest	$2,766,285	$14,303	$2,780,589
Kenora Forest	$494,408	$240,711	$735,119
Lac Seul Forest	$1,996,748	$55,607	$2,052,355
Lake Nipigon Forest	$1,345,492	$168,380	$1,513,872
Lakehead Forest	$815,518	$187,534	$1,003,052
Magpie Forest	$481,343	$5,336	$486,678
Martel Forest	$2,879,347	$28,922	$2,908,269
Mazinaw-Lanark Forest	$496,149	$4,245	$500,394
Nagagami Forest	$1,090,728	$27,871	$1,118,600
Nipissing Forest	$1,752,321	$122,474	$1,874,795
Northshore Forest	$2,027,389	$180,308	$2,207,697
Ogoki Forest	$981,825	$0	$981,825
Ottawa Valley Forest	$931,630	$21,228	$952,859
Pic River Ojibway	$58,242	$0	$58,242
Pineland Forest	$1,132,214	$4,184	$1,136,398
Red Lake Forest	$341,140	$617	$341,757
Romeo Malette Forest	$1,061,228	$220,379	$1,281,606
Sapawe Forest	$397,787	$849	$398,636
Spanish Forest	$2,845,598	$149,322	$2,994,920
Spruce River Forest	$1,702,091	$415,191	$2,117,282
Sudbury Forest	$1,166,846	$77,833	$1,244,679
Temagami	$444,916	$25,385	$470,301
Timiskaming Forest	$4,790,491	$199,150	$4,989,641
Trout Lake Forest	$3,137,468	$213,029	$3,350,496
Wabigoon Forest	$3,165,246	$126,235	$3,291,481
Whiskey Jack Forest	$1,168,357	$6,049	$1,174,407
White River Forest	$673,912	$45,103	$719,014
	$67,514,139	$6,757,431	$74,271,571

MNR Admin Costs	$728,429
Total Funds Spent	$75,000,000

Key Facts

This chapter highlights the forest compliance monitoring program undertaken to ensure the MNR and forest industry conduct forest operations according to the legislation and approved plans and to prevent damage to Crown forests. Under this program, the MNR and forest industry inspect and report on access, harvest, renewal and maintenance activities. The Forest Operations Information Program (FOIP) stores information collected through forest compliance monitoring for analysis and reporting to the MNR, the forest industry and the public.

Summary of Forest Operations Compliance Monitoring - 2010/11

- The average compliance rate across all operations (access, harvest, renewal, and maintenance) for both industry and MNR was 98%;
- 230 certified forest operations compliance inspectors submitted 3,223 inspections to FOIP during 2010/11, a reduction in reports of 11% from 2009/10 (Figure 9a);
- The ratio and number of inspections undertaken by the industry and the MNR (Table 9a) was relatively consistent with previous years;
- A total of 64 remedy and enforcement actions were taken, 18 of which resulted in penalties and fines totalling $23,630 (Table 9b); and
- Reduced harvest, access, renewal and maintenance activities due to the downturn in the forest industry are responsible for the reduced number of compliance inspections relative to previous years.

forest compliance

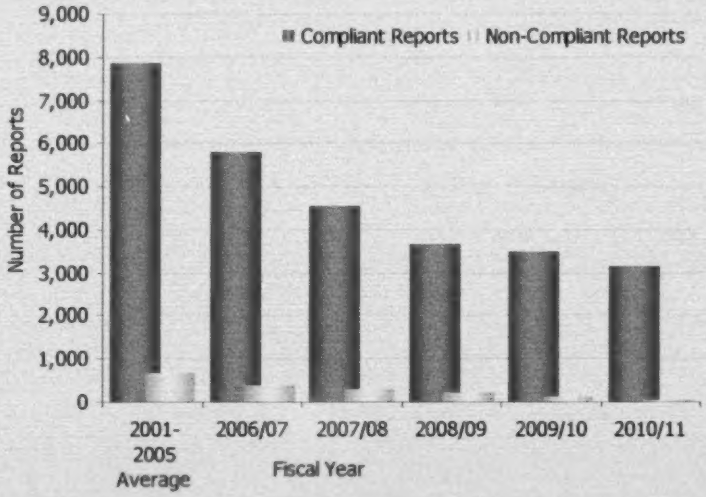


Figure 9a - Compliance Inspection Report Summary

Forest Compliance

Table 9a - Forest Operations Compliance Inspection Reports Summary - 2010/11

Operation	Reports	Industry	MNR
Access	Compliant Reports	743	160
	Non-Compliant Reports	13	3
	Total	756	163
Harvest	Compliant Reports	1,483	496
	Non-Compliant Reports	18	20
	Total	1,501	516
Renewal	Compliant Reports	173	61
	Non-Compliant Reports	1	-
	Total	174	61
Maintenance	Compliant Reports	33	17
	Non-Compliant Reports	-	2
	Total	33	19
All	Compliant Reports	2,432	734
	Non-Compliant Reports	32	25
	Total	2,464	759

Table 9b - Remedy and Enforcement Actions Taken - 2010/11

Method		Number	Value
Written Warning		37	
Orders	Stop/Limit/Amend	0	
	Repair	1	
	Compliance	8	
Administrative Penalty[1]		17	$21,437
Offence Charge[2]		1	$2,193
License Suspension and Cancellation		0	n/a
Total Actions		64	$23,630

[1] *To Forestry Futures Trust Fund*

[2] *To Consolidated Revenue Fund (general revenue)*

Sources: FOIP (Forest Operations Information Program), Apr. 11, 2012
OTARS (Ontario Timber Accounts Receivable System), Mar. 8, 2012
CAVRS (Compliance Activity Violations Reporting System), Apr. 13, 2012

Inspector Training

Compliance Inspection

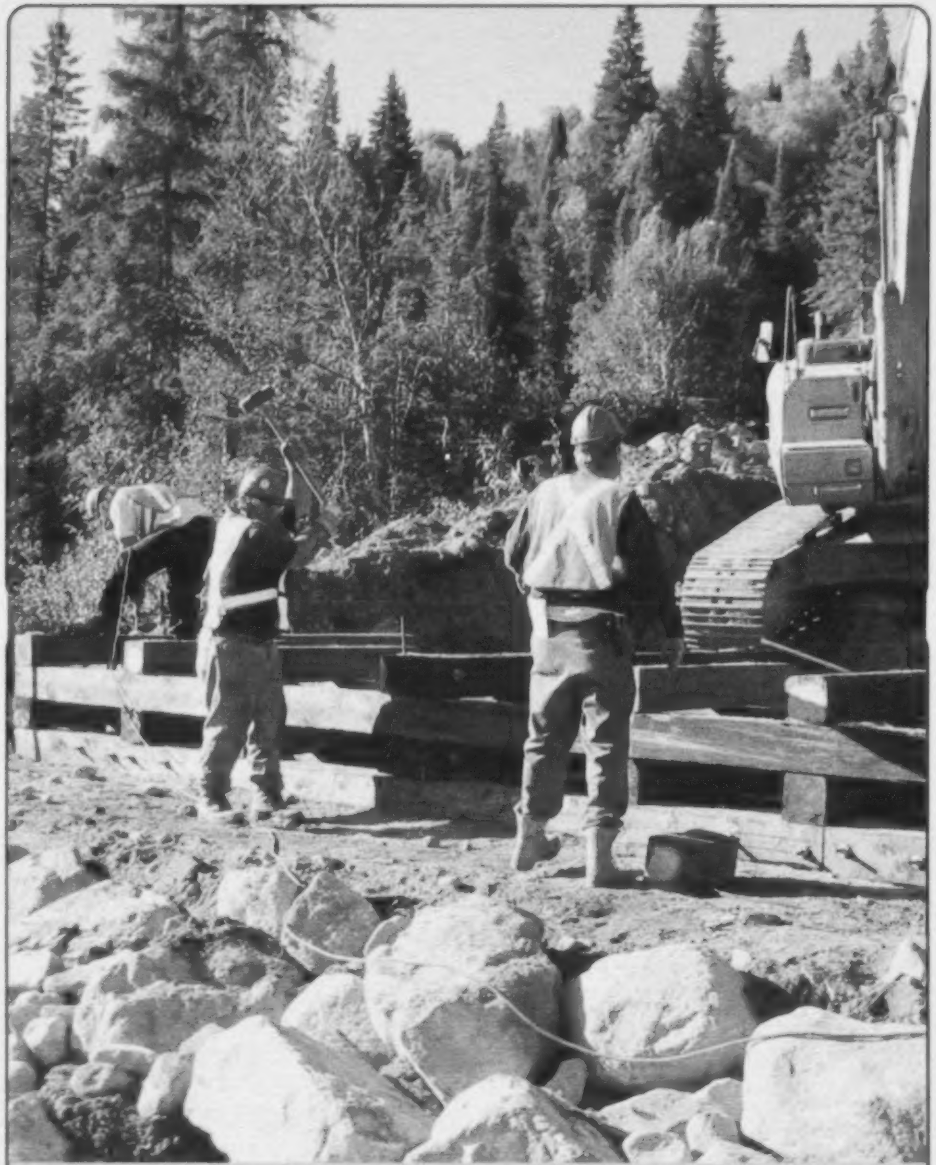
Key Facts Background Data

Background

Ontario's forest operations compliance monitoring system is designed to ensure MNR and forest industry conduct forest operations in compliance with legislation and in accordance with approved plans (e.g. forest management plans). It also ensures that forest management related statutes and regulations are interpreted consistently and enforced fairly but firmly in all cases of non-compliance.

The forest compliance program is based on a partnership between MNR and forest industry, with a clear separation of roles and responsibilities. The industry role is one of "self-monitoring" wherein the SFL holder has lead responsibility for a comprehensive forest operations compliance program as a condition of its licence. This compliance program includes planning, monitoring (inspecting and reporting), training and education. The SFL holder is required to report all suspected incidents of non-compliance on their management unit to the MNR. As the regulatory agency, the MNR retains full responsibility for administration and implementation of the CFSA which includes monitoring, auditing, determining compliance status, taking appropriate enforcement action and applying remedies when necessary.

The compliance program reports infractions of the CFSA committed by private individuals as "non-licensee related". Management units not assigned to an SFL remain the responsibility of MNR for delivery of all aspects of the compliance program. The web-based application, FOIP, is the system used for recording compliance inspections. It provides a consistent approach to forest compliance inspectors for reporting inspections. Its use is mandatory for reporting on all forest operations inspections conducted on Crown land.



Bridge Construction

Key Facts | Background | Data

All MNR and forest industry forest compliance inspectors must be certified. Certification ensures consistent skills and competencies in compliance assessment and reporting among inspectors. To maintain certification, inspectors are required to undertake a program of continuing education and to undergo testing on a five-year cycle.

Remedy and Enforcement

Industry must report all suspected non-compliant situations. MNR verifies these situations then determines the appropriate enforcement action and/or remedy.

The earlier an operational problem is identified and responded to, the more likely impacts can be avoided, prevented or mitigated. In many instances, prompt corrective action is undertaken and enforcement action or remedies are not warranted.

CFSA enforcement and remedy provisions are primarily directed at licensees of the Crown, but any person who contravenes the CFSA may be subject to its remedies. Any enforcement action taken or remedy applied will be unique to, and reflect the circumstances and nature of the infraction and the offender.

Although all incidents of non-compliance are reported in the fiscal year in which they occurred, it often takes time to determine and apply remedies (e.g. under investigation or subject to court action). Remedies are recorded and reported when resolved.

Drilling Operation Supervision

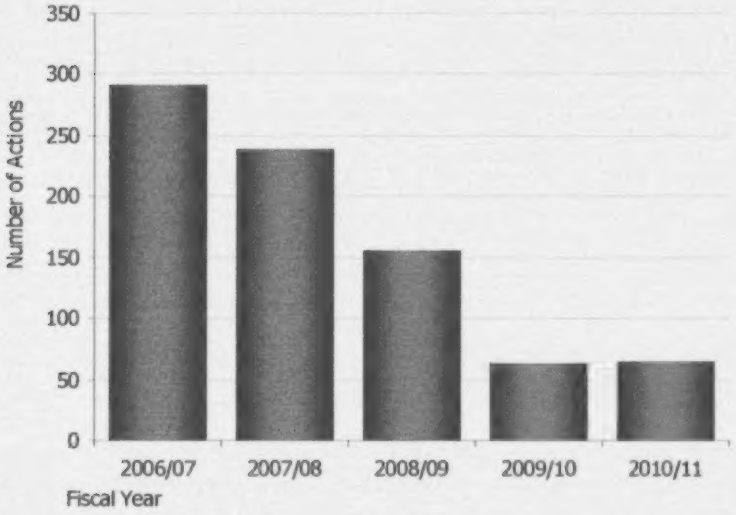
Bridge Inspection

Data

Table 9c - Forest Operations Compliance Inspection Reports Summary

Source	Reports	2001-2005 Average	2006/07	2007/08	2008/09	2009/10	2010/11
Industry	Compliant Reports	6,377	4,721	3,749	2,901	2,691	2,432
	Non-Compliant Reports	306	197	159	98	63	32
	Total	6,683	4,918	,908	2,999	2.754	2,464
MNR	Compliant Reports	1,478	1,101	3,788	777	809	734
	Non-Compliant Reports	349	179	116	98	73	25
	Total	1,827	1,280	898	875	882	759
All	Compliant Reports	7,855	5,822	4,537	3,678	3,500	3,166
	Non-Compliant Reports	655	376	275	196	136	57
	Total	8,510	6,198	4,806	3,874	3,636	3,223

Figure 9b - Remedy and Enforcement Actions Taken



Key Facts

This chapter summarizes Independent Forest Audits (IFAs) completed in 2010. IFAs are a requirement of the CFSA - Ontario Regulation 160/04, condition 28 of MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario, and are a condition of all SFLs. All management units are audited at least once every five years to review operations and to examine forest management activities carried out over the previous five years.

Summary of Independent Forest Audits - 2010/11

- IFAs were completed on eleven management units in 2010.
- Table 10a provides a complete listing of the 2010 audits and auditors.
- The results of the 2010 IFAs were positive. Ten of the eleven audit reports concluded that, during the term of the audit, the forests were being managed in compliance with legislation and policy requirements, licence requirements, and with the principles of sustainable forest management (Table 10b).
- The Wabigoon Forest was not deemed to be in compliance with legislation and policy requirements and was not considered to be sustainably managed. This licence was not recommended for extension.
- Licence extension was recommended for seven of the forests audited, with two of these forests requiring conditions being met prior to extension;
    - Kenogami Forest: auditors identified two 'critical exceptions' to sustainable management related to significant unutilized fibre remaining on the forest and outstanding Forestry Futures Trust, Crown dues and Forest Renewal Trust payments.
    - Red Lake Forest: auditors identified one 'critical exception' to sustainable management related to requiring a review of the balance of plan objectives in the 2008-2018 FMP to ensure all values have been fully considered in the plan.

forest audits

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Red Lake Forest
Independent Forest Audit
2005-2010
Final Report
kbm

Background

An independent forest audit is a systematic and documented verification process to assess adherence to the forest management plan and planning process. The performance of both the licensee and MNR are audited during the IFA. Assessing the interpretation and application of provincial legislation, manuals, policies and guidelines at the management unit level is part of the audit. Auditors examine the effectiveness in achieving the planned objectives and provide an assessment of forest sustainability for the management unit. Audit teams also review licensee compliance with the obligations of their specific SFL.

The audit terms of reference are the same for all IFAs. This includes the audit team personnel requirements, and requiring minimum years of recent and relevant experience in forest types similar to those being audited. They must be independent of the operations they audit, as well as free from any conflict of interest throughout the process. The audit team must include a Registered Professional Forester. Audit teams are required to provide an audit verifying the requirements that were in effect during the audit period, and prepare a report for publication. Auditor selection and contract management is facilitated by the Forestry Futures Trust Committee and audits are paid for by the Forestry Futures Trust Fund.

In order to fully address the audit purpose and objectives, an audit process and protocol document sets out the forest management principles, criteria, and procedures for undertaking IFAs. The audit protocol identifies eight guiding principles: commitment; public participation; forest management planning; plan implementation; systems support; monitoring; achievement of management objectives and forest sustainability; and contractual obligations. For each principle, a series of specific criteria have been identified that, when met, will result in achievement of the principle.

Examining a Stream Crossing

Regeneration Assessment

Forest Audits

Where criteria are not achieved, or the audit team observes a critical lack of effectiveness in forest management activities, the audit team may develop a recommendation to address the situation. Recommendations are directed to the licensee, the MNR, or both auditees jointly. Audit teams may also recognize and document exceptional management practices (known as "best practices").

Action plans must be developed by auditees to address audit report recommendations. Recommendations directed to the SFL holder and MNR District are addressed in a management unit action plan and are approved by senior MNR executives. Recommendations directed to MNR Corporate are addressed in a separate annual provincial action plan. A status report on the implementation of the action plan is required two years after its approval, to ensure progress is occurring as specified in the plan. All IFA reports are tabled in the Legislature and are available at: http://www.ontario.ca/forests

Table 10a - List of Independent Forest Audits and associated auditors for 2010

Management Unit	Management Entity	Independent Auditor
Dog River- Matawin Forest	AbiBow Canada Inc.	Craig Howard & Associates
English River Forest	AbiBow Canada Inc.	Craig Howard & Associates
Gorden Cosens Forest	Spruce Falls Inc.	ArborVitae Environmental Services Ltd.
Kenogami Forest	Terrace Bay Pulp Inc.	Arbex Forest Resource Consultants Ltd.
Ogoki Forest	Long Lake Forest Products Inc.	Arbex Forest Resource Consultants Ltd.
Red Lake Forest	Red Lake Forest Management Company Ltd.	KBM Forestry Consultants Inc.
Spanish Forest	Domtar Inc. (Eacom)	ArborVitae Environmental Services Ltd.
Wabigoon Forest	Domtar Inc.	ArborVitae Environmental Services Ltd.
Cochrane-Moose River MU	Crown	KBM Forestry Consultants Inc.
Iroquois Falls Forest	AbiBow Canada Inc.	KBM Forestry Consultants Inc.
Smooth Rock Falls Forest	AbiBow Canada Inc.	KBM Forestry Consultants Inc.

Data

The audit reports provided a total of 172 recommendations. Table 10c provides a summary of recommendations by audit principle. The majority of the recommendations were related to forest management planning (33%), followed by plan implementation and assessment (27%), and monitoring (21%).

Recommendations common to a number of the reports, grouped by subject matter, include:

Public Participation

- MNR to continue to improve consultation efforts with Aboriginal peoples (First Nations and Métis) and increase their involvement in forest management planning.

Forest Management Planning and Implementation

- The effectiveness of forest management plan model inputs and projections, used to support planned harvest levels was questioned;
- Slash management practices need to be improved;
- Road construction practices should focus on continual improvement, especially in areas of cross-drainage installation and grading; and
- Timely tending and spacing operations need to take place on regenerating forests to ensure regeneration success.

Monitoring

- Silviculture Effectiveness Monitoring programs need to be improved;
- Improvements need to be made to Annual Report content and timelines for submission; and
- Licence holders need to implement improved tracking and monitoring systems for compliance status on harvest blocks and roads.

Table 10b - Independent Forest Audit Results for 2010 Audits

Management Unit	In Compliance[1]	Sustainably Managed	SFL Extension Recommended
Dog River- Matawin Forest	Yes	Yes	Yes
English River Forest	Yes	Yes	Yes
Gorden Cosens Forest	Yes	Yes	Yes
Kenogami Forest	Yes	Yes	Yes (Conditions)[2]
Ogoki Forest	Yes	Yes	Yes
Red Lake Forest	Yes	Yes	Yes (Conditions)[2]
Spanish Forest	Yes	Yes	Yes
Wabigoon Forest	No	No	No
Cochrane-Moose River MU	Yes	Yes	Not Applicable[3]
Iroquois Falls Forest	Yes	Yes	Not Applicable[3]
Smooth Rock Falls Forest	Yes	Yes	Not Applicable[3]

[1] *Managed in overall compliance with legislative and policy requirements in effect during the audit period.*

[2] *The audit team concluded the forest had been managed in compliance with legislative and policy requirements and sustainably; however, they did not recommend licence extension until certain required conditions had been resolved.*

[3] *A recommendation on licence extension was not made as the units were being amalgamated into the new Abitibi River Forest and a new licence with a twenty year term was issued to Abitibi River Forest Management Inc. in August 2010. A recommendation on licence extension will occur during the next IFA.*

Contractual Obligations

- Forest Renewal and Forestry Futures charges and Crown dues need to be payed as required; and
- MNR needs to revise wood supply agreements.

Table 10d outlines IFA recommendations by forest and by organization responsible.

Table 10c - Summary of 2010 IFA Recommendations by Principle

	Management Unit												
Recommendations by Audit Principle[1]	Dog River Matawin	English River	Gorden Cosens	Kenogami	Ogoki	Red Lake	Spanish	Wabigoon	Cochrane-Moose River	Iroquois Falls	Smooth Rock Falls	Total	% Total [2]
Commitment	0	0	0	0	0	0	0	0	0	0	0	0	0%
Public Participation	0	0	2	0	1	1	0	2	1	3	3	13	8%
Forest Management Planning	2	4	3	2	0	2	1	7	12	12	12	57	33%
Plan Implementation	8	6	4	3	2	5	0	6	3	5	4	46	27%
System Support	0	0	0	0	0	0	1	1	0	0	1	3	2%
Monitoring	5	6	1	3	1	1	2	6	2	5	4	36	21%
Management Objectives and Forest	0	0	0	0	1	0	0	0	0	0	0	1	1%
Contractual Obligations	1	1	1	5	2	0	0	3	1	1	1	16	9%
Total	16	17	11	13	7	9	4	25	19	26	25	172	100%

[1] *Values exclude the final recommendation on licence extension.*

[2] *This represents the number of audit recommendations by audit principle as a percentage of the total number of audit recommendations (Percentages may not total 100% because of rounding).*

Table 10d - Summary of 2010 IFA Recommendations by Responsibility

	Recommendations by Organization[1]			
Management Unit	Licensee	MNR	Joint (Licensee & MNR)[2]	Total
Dog River- Matawin Forest	10	4	2	16
English River Forest	10	2	4	16
Gorden Cosens Forest	3	4	4	11
Kenogami Forest	4	3	6	13
Ogoki Forest	3	2	2	7
Red Lake Forest	6	1	2	9
Spanish Forest	0	4	1	5
Wabigoon Forest	10	6	9	25
Cochrane-Moose River MU	10	8	1	19
Iroquois Falls Forest	15	11	0	26
Smooth Rock Falls Forest	15	10	0	25
Total[3]	86 (50%)	55 (32%)	31 (18%)	172 (100%)

[1] *Values exclude the final recommendation on licence extension.*

[2] *Recommendations directed at planning teams were also assigned as joint recommendations.*

[3] *The number in parentheses represents the number of audit recommendations by organization as a percentage of the total number of audit recommendations.*

The 2010 audit reports identified several best practices. Best practices were awarded for:

- Excellent monitoring of silviculture effectiveness and compliance;
- A multi-partner woodland caribou study which provided significant science-based contributions to forest management planning;
- The development and implementation of a renewal tracking system; and
- Using a spatial modelling tool in forest management planning.

Summary of 2006 - 2010 Audit Reports

Table 10e summarizes the audit results from 47 audit reports completed over a five-year period from 2006 to 2010. During this five-year period, 36 reports recommended licence extension, 4 reports recommended conditional licence extension, and 1 report recommended the licence not be extended.

The Independent Forest Audit program is serving its purpose. Audit reports identified areas for improvement in all eleven of the forest management units audited. The MNR and SFL holders have responded by putting solutions in place, which are documented in mandatory action plans that are developed subsequent to the completion of audit reports.

Figure 10a provides a geographic reference to the management units audited in 2010 and 2011.

Table 10e - Summary of 2006-2010 Audit Reports

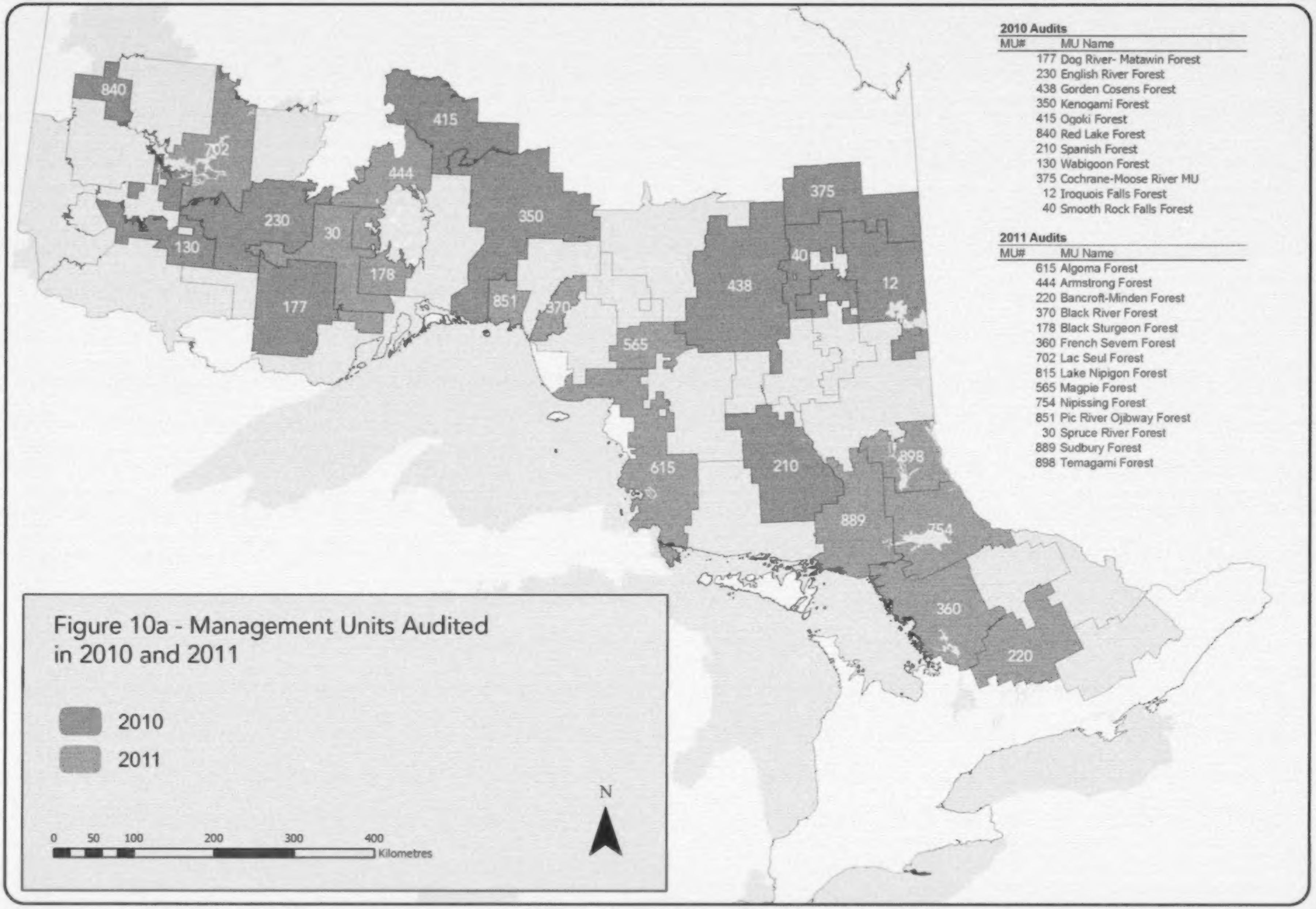
Audit Year	Audit Reports	Recommendation on Licence Extension		
		Extend	Extend with Conditions	Do Not Extend
2006	15[1]	13	1	0
2007	9	9[2]	0	0
2008	5	4	1	0
2009	7[3]	5	0	0
2010	11[4]	5	2	1
Total	47	36	4	1

[1] Includes the Temagami Management Unit which is not managed under a SFL and therefore no recommendation was made on licence extension.

[2] Includes the Algonquin Park Forest which is not managed under a Sustainable Forest Licence. Auditors provide a recommendation on whether the Algonquin Forest Agreement should be extended.

[3] Recommendations on licence extension not provided on two management units due to the SFL being surrendered on one management unit and the financial status of the SFL manager on the other management unit.

[4] Recommendation on licence extension not provided on three management units (Cochrane-Moose River Management Unit, Iroquois Falls, and Smooth Rock Falls Forests) as they were being amalgamated into the new Abitibi River Forest.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230
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130
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177
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Figure 10a - Management Units Audited in 2010 and 2011

2010 Audits

MU#	MU Name
177	Dog River- Matawin Forest
230	English River Forest
438	Gorden Cosens Forest
350	Kenogami Forest
415	Ogoki Forest
840	Red Lake Forest
210	Spanish Forest
130	Wabigoon Forest
375	Cochrane-Moose River MU
12	Iroquois Falls Forest
40	Smooth Rock Falls Forest

2011 Audits

MU#	MU Name
615	Algoma Forest
444	Armstrong Forest
220	Bancroft-Minden Forest
370	Black River Forest
178	Black Sturgeon Forest
360	French Severn Forest
702	Lac Seul Forest
815	Lake Nipigon Forest
565	Magpie Forest
754	Nipissing Forest
851	Pic River Ojibway Forest
30	Spruce River Forest
889	Sudbury Forest
898	Temagami Forest

Key Facts

This section reports on management units in Ontario that have received certification by independent third party organizations. Forest certification recognizes forest management planning and forestry practices have met a forest management standard.

Summary of Forest Certification - 2010/11

- The Ottawa Valley Forest was certified by FSC for the first time;
- All previously registered / certified forest management units continued efforts to demonstrate ongoing conformance to their selected certification systems during the fiscal year. Based on the certification audit cycles, a number of management units went through re-certification audits during the year and were successful in maintaining forest certification standards;
- SFI 2010-2014 standard was approved January 2010 and by December 31, 2010 all forests certified to SFI were in full conformance with this standard;
- CAN CSA Z809-08 was released as an update to Z809 standard in June 2010;
- Table 11a outlines the management units and certification standard to which they are certified; and
- Figure 11a provides a map highlighting the regional distribution of forest certification across Ontario as of April 1, 2011.

forest certification

FSC®

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PEFC

Canadian
Sustainable
Forest
Management

SUSTAINABLE
FORESTRY
INITIATIVE

SFI-01329

Background

Forest certification is granted by independent organizations external to government and the forest industry. Forest certification serves as a marketing tool to promote well-managed forests. Forest certification is a system for certifying forests and labelling forest products.

The intent of forest certification is to provide consumers with assurance that wood and paper products come from responsibly managed forests. Forest certification systems are based on environmental, social and economic elements that favour good forest management practices resulting in sustainable forest products while ensuring environmental goods and services (e.g. wildlife habitat and water quality protection) are maintained.

Within the limits of its provincial government mandate, the MNR provides technical and policy advice, both during the development of certification standards and to forest companies seeking certification of forest lands in Ontario.

There are three forest certification standards used by Ontario forest companies. They are:

1. Canadian Standards Association (CSA) Sustainable Forest Management Standard, approved by the Standards Council of Canada;
2. Forest Stewardship Council (FSC) Principles and Criteria for Forest Management applicable to Ontario: FSC Standards for Well Managed Forests in the GLSL Forests of Ontario and Quebec (draft); and the National Boreal Standard; and
3. Sustainable Forestry Initiative (SFI).

As a first step in forest certification, many companies have registered their environmental management systems to the International Organization for Standardization Environmental Management System (ISO) 14001.

The MNR ensures the sustainable forest management of Crown forests through a rigorous policy and regulatory framework. Forest companies operating in Ontario are required to comply with long-term, ecosystem-based forest management planning. Extension of a SFL is dependent upon satisfactory results of a mandatory Independent Forest Audit. Therefore, forest management companies in Ontario are well positioned to meet any forest certification/registration system standard.

Data

Table 11a - Ontario Sustainable Forest Licences Certified and Non Certified (as of April 1, 2011)

Management Unit	Sustainable Forest Licence holder	Certification Standard (registration date)
Abitibi River[1]	Abitibi River Forest Management Inc.	FSC (Jun 2010)/SFI (Jan 2010)
Algoma Forest	Clergue Forest Management Inc.	FSC (Jun 2010)
Algonquin Park Forest	Algonquin Forestry Authority	CSA (Feb 2011)
Bancroft-Minden Forest	Bancroft-Minden Forest Company Inc.	Not certified
Big Pic Forest	Crown	Not certified
Black River Forest	Great West Timber Limited	SFI (Jul 2007)
Black Spruce Forest	AbiBow Canada Inc.	SFI (Jan 2010)
Caribou Forest	AbiBow Canada Inc.	SFI (Jan 2010)/FSC (Dec 2009)
Crossroute Forest	AbiBow Canada Inc.	SFI (Jan 2010)
Dog River-Matawin Forest	AbiBow Canada Inc.	SFI (Jan 2010)
Dryden Forest	Dryden Forest Management Company Ltd.	SFI (Dec 2009)
English River Forest	AbiBow Canada Inc.	SFI (Jan 2010)
French-Severn Forest	Westwind Forest Stewardship Inc.	FSC (Feb 2007)
Gordon Cosens Forest	Spruce Falls Inc.	FSC (Apr 2008)
Hearst Forest	Hearst Forest Management Inc.	Not certified
Kenogami Forest	Terrace Bay Pulp Inc.	SFI (Mar 2007)
Kenora Forest	Miitigoog Limited Partnership	SFI (Jan 2011)
Lac Seul Forest	McKenzie Forest Products Inc.	SFI (Jun 2007)
Lake Nipigon Forest	Lake Nipigon Forest Mangement Company	Not certified
Lakehead Forest	Greenmantle Forest Inc.	Not certified
Magpie Forest	Dubreuil Forest Products Limited	SFI (Jun 2007)
Martel Forest	Tembec Industries Inc.	FSC (Jan 2011)
Mazinaw-Lanark Forest	Mazinaw-Lanark Forest Inc.	Not certified
Nagagami Forest	Nagagami Forest Management Ltd.	Not certified
Nipissing Forest	Nipissing Forest Resource Management Inc.	FSC (Nov 2008)
Northshore Forest	Northshore Forest Inc.	FSC (Jun 2010)
Ogoki Forest	Long Lake Forest Products Inc.	SFI (Mar 2007)
Ottawa Valley Forest	**Ottawa Valley Forest Inc.**	**FSC (Nov 2010)**
Pic River Ojibway Forest	Great West Timber Limited	SFI (Jul 2007)
Pineland Forest	Pineland Timber Company Ltd.	FSC (Aug 2005)
Red Lake Forest	Red Lake Forest Management Company Ltd.	Not certified
Romeo Malette Forest	Tembec Industries Inc.	FSC (Jun 2010)
Sapawe Forest	Atikokan Forest Products Ltd.	SFI (Jun 2007)
Spanish Forest	Eacom Timber Corporation	FSC (Aug 2006)
Sudbury Forest	The Vermillion Forest Management Company Ltd.	FSC (May 2006)
Timiskaming Forest	Timiskaming Forest Alliance Inc.	Not certified
Trout Lake Forest	Domtar Pulp and Paper Products Inc.	CSA (Dec 2009)
Wabigoon Forest	Domtar Pulp and Paper Products Inc.	CSA (Dec 2009) / FSC (Sep 2008)
Whiskey Jack Forest	Abitibi-Consolidated Company of Canada	Not certified
White River Forest	White River Forest Products Ltd.	Not certified

Note: Units in bold represent first time certification for 2010/11

[1] Abitibi River Forest created from Iroquois Falls, Nighthawk and Smooth Rock Falls Forests (August 10, 2010)

[2] Black Spruce Forest created from amalgamation of Black Sturgeon and Spruce River Forests.

Forest Certification

Key Facts | Background | Data

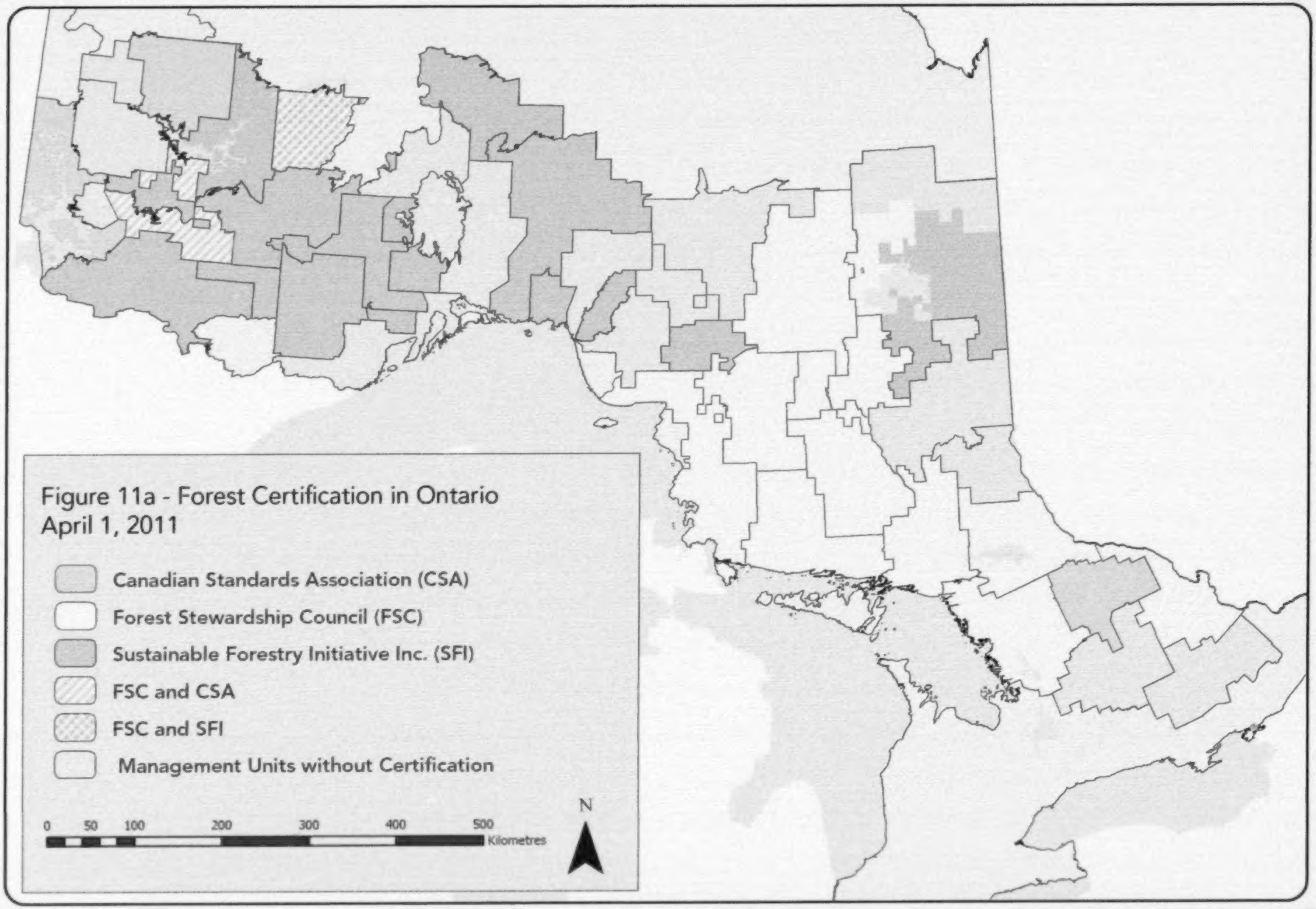


Figure 11a - Forest Certification in Ontario
April 1, 2011

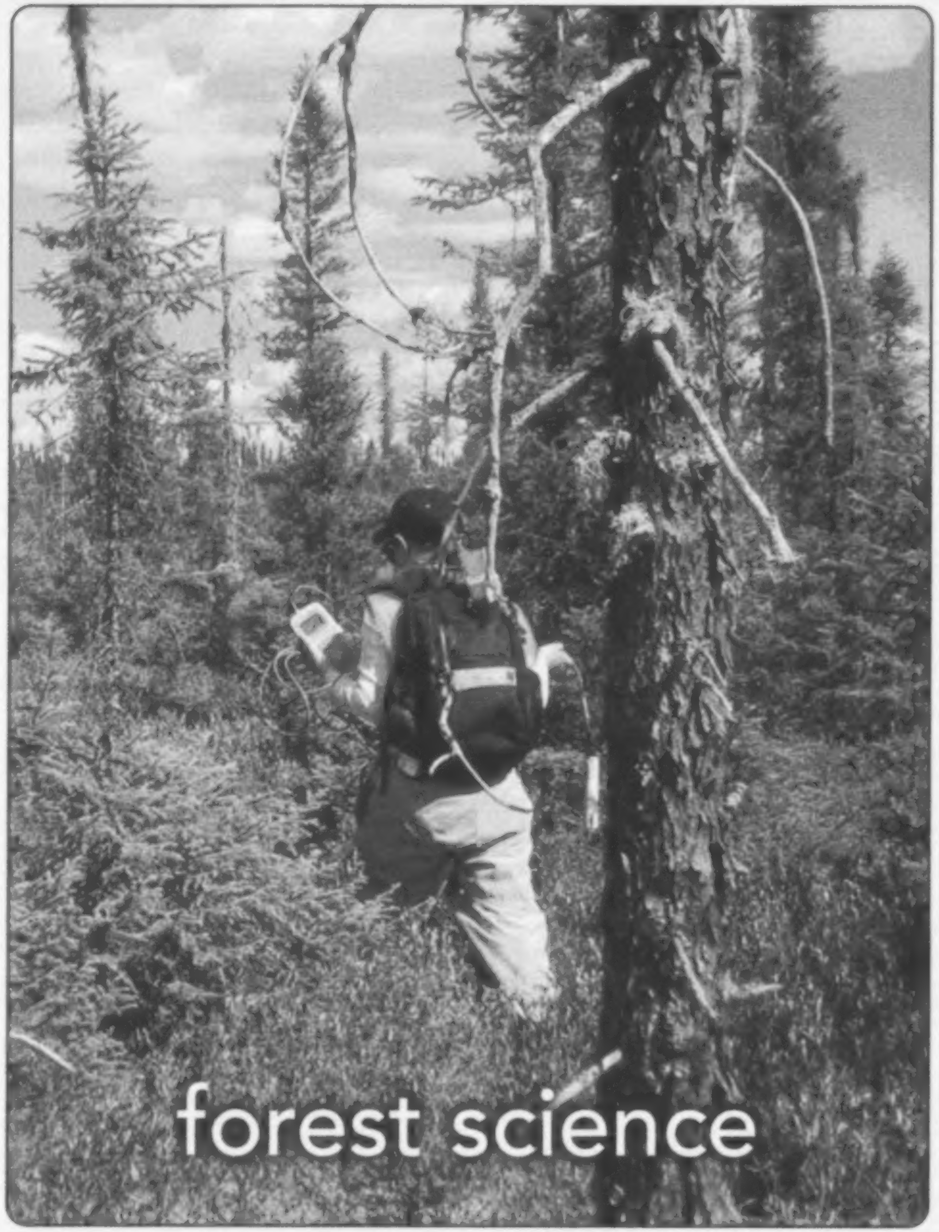
Canadian Standards Association (CSA)
Forest Stewardship Council (FSC)
Sustainable Forestry Initiative Inc. (SFI)
FSC and CSA
FSC and SFI
Management Units without Certification
0
50
100
200
300
400
500
Kilometres
N

Overview

This section highlights significant advances and milestones during 2010/11 in specific policy development, technical development, and scientific programs related to forest management made by the MNR in cooperation with its partners, including:

- Climate change research;
- Preparation and implementation of new policies, procedures, and forest management guides;
- Development, maintained and implemented long-term monitoring programs and scientific studies;
- Educating professionals and the public;
- Development of new forest management methods, models, and tools; and
- Development of new and improved data and information sources.

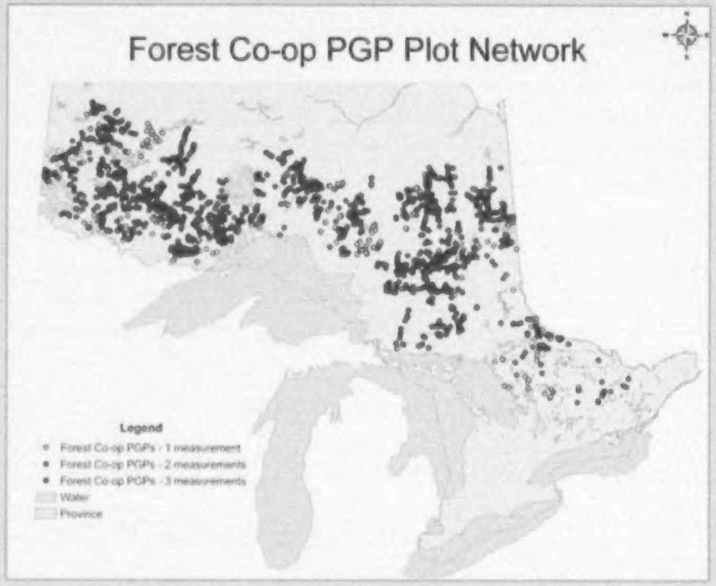
Many research projects are in progress or deal with subjects indirectly related to forest management and are not reported in this document. More information about other research work undertaken by the MNR is available at: http://www.ontario.ca/forests.



Forest Ecosystem Science Co-operative Inc.

The Forest Ecosystem Science Co-operative Inc. is a partnership between government and industry researchers investing in forest science for the purpose of supporting sustainable forest management thereby reducing uncertainties associated with forest management decisions. Recent projects of the Forest Co-Op Fish and Wildlife Science Unit have focused on the following areas:

- Bio-Indicators of Forest Stream Health Report;
- Wetlands and Water-birds Project;
- Lichens & Caribou Vegetation Management Alternatives Program Project;
- Caribou Habitat & Population Project;
- Electronic Data Capture Protocol Project;
- Co-op Fibre Optimization Project;
- Permanent Growth Plot (PGP) Program (Innovation in Forecasting Forest Habitat and Wood Supply; and
- Investing in Higher Learning & Research (Natural Sciences and Engineering Research Council of Canada, Industrial Postgraduate Scholarship Program).


Forest Co-op PGP Plot Network
Legend
Forest Co-op PGPs - 1 measurement
Forest Co-op PGPs - 2 measurements
Forest Co-op PGPs - 3 measurements
Water
Province

INSPIRATION
COLLABORATION
PARTNERSHIP
INNOVATION
Forest Ecosystem Science
Co-operative Inc.

Climate Change Mitigation and Adaptation

Climate change is a key priority for the Ontario government and for the MNR. The MNR has developed a strategy for climate change, entitled Sustainability in a Changing Climate: A Strategy for the Ontario Ministry of Natural Resources (2011-2014). This strategy confirms MNR's commitment to Ontario's climate change initiatives and outlines research and management program priorities moving forward under three themes:

- Understanding climate change;
- Mitigating climate change; and
- Helping Ontarians adapt.

During 2010/11, MNR developed and released "A Practitioners Guide to Climate Change Adaptation in Ontario's Ecosystems". In addition, MNR worked on developing policy documents for future release in the areas of carbon sequestration, climate change impacts on aquatic ecosystems and climate change adaptation strategies for Ontario's forests.

The MNR partners with the federal government and the other provinces and territories on the Canadian Council of Forest Ministers. The Council has commissioned both mitigation and adaptation oriented reports.

Forest Management Guide Developments

The Provincial Forest Technical Committee advises MNR on how to ensure that forest management guides that support the CFSA and the FMPM are kept current with the latest scientific knowledge and best practices. In accordance with EA conditions, the Provincial Forest Technical Committee met several times to address FMPM guide development.

Preparation of the draft Forest Management Guide for Boreal Landscapes continued in 2010/11. Guidance in the document has been determined to be closely dependent on two key components of woodland caribou management; the caribou conservation plan and the specifics of the caribou habitat regulation to be made under the Endangered Species Act.

MNR provided training on all guides for the 2012 and 2013 forest management planning teams. All FMP teams were trained on the Stand and Site Guide. Additional GLSL Landscape Guide transfer was provided to southern Ontario stakeholders and partners. Operator training for the Stand and Site Guide was conducted across the AOU, with workshops in Chapleau, Dryden, Espanola and Bancroft. The Forest Management Guide webpage gives an overview of the current guides and their status.

Spatial Ecology Program

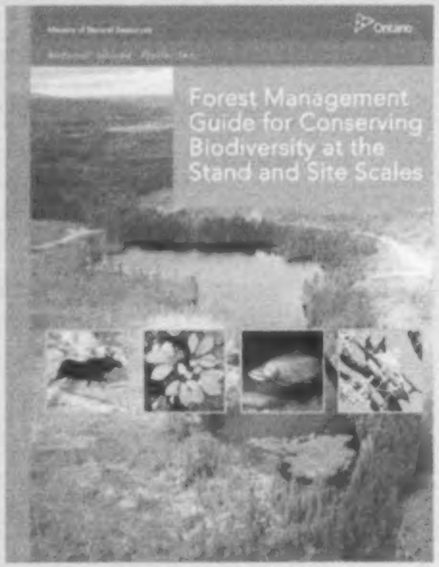
The spatial ecology program assists in the development and evaluation of forest policies and practices for the conservation of wildlife biodiversity in Ontario's boreal forest.

Wood Turtle Research

Research is being conducted on several fronts, including: spatial forest ecology, songbird monitoring, forest management scenario analysis, moose habitat analysis, systems modeling, and riparian/wetland ecology.

In 2010/11, the MNR continued to provide support to forest management planning teams using spatial forest estate models (BFOLDS, Patchworks, etc.). Additionally, various spatial habitat models were used in the Ontario Landscape Tool for forest management planning under the new guides.

The models allow scenario analysis of forest management options to be completed in support of developing boreal landscape guide direction in forest management plans. Scenario analysis compares the current forest condition with conditions generated by simulated natural disturbance and various forest management guide options.



Ontario

Forest Management
Guide for Conserving
Biodiversity at the
Stand and Site Scales

Ecological Land Classification Program

The Ecological Land Classification (ELC) program, formerly the Forest Ecosystem Classification Program, is mandated with the establishment of a comprehensive and consistent province-wide framework for ecosystem description, inventory and interpretation.

Work continued on the development of the ELC program in 2010/11 including:

- Maintenance and minor updates to 2010 Provincial Substrates (soil description) materials with ongoing technical review and application testing;
- Production of ecosite factsheets: Boreal treed, Wetland, Great Lakes Non-treed released;
- Development of Ecodistricts of Ontario in preparation for 2012 release;
- Ongoing implementation of ELC through Provincial Forest Resource Inventory in 5 SFLs;
- Work on the Great Lakes and Southern portions of the Canadian Vegetation Classification;
- Ongoing development of support graphics for ecosites and landscape topo-sequences in support of ELC and photo-interpretation manuals;
- User/practitioner training workshops and field courses (12) held province-wide;
- Release of revisions to Old Growth Forest Definitions for Ontario; and
- Incorporating ELC ecosite framework into Provincial Silviculture Guides revision.

Canada Lynx

Growth and Yield

Measuring and predicting how trees and forests grow is the science of growth and yield. The Growth and Yield Program in Ontario is actively involved in a wide range of activities from the collection of field data and information, to the creation of new models, guidelines, and monitoring procedures. Results from this program are used in forest management planning and help guide the determination of the sustainable harvest area. The program also plays a key role in shaping the models and tools used to forecast the growth and development of Ontario's forests. The core element of this program is an extensive network of permanent sample plots on which the growth and status of individual trees is tracked through time. Data collected from these plots provides information on forest growth and yield as influenced by site, forest structure, silvicultural treatments and natural events.

In 2010/11, work continued on the Growth and Yield Program with the following highlights:

- Completed the re-measurement of 20 permanent sample plots through partnerships in southern Ontario with conservation authorities and county forests;
- Established or re-measured 45 permanent sample plots within the AOU and 4 permanent sample plots in the Far North;
- Established or re-measured 107 permanent growth plots across the province;
- Through a partnership with the Forest Ecosystem Science Co-operative, re-measured 300 permanent growth plots; and
- Completed stem analysis on cedar and larch on 22 plots.

Full-tree Harvest and Biomass Studies

The full-tree harvesting project, initiated in 1991, was designed to focus on ecosystem processes and the changes occurring in these processes in response to varying levels of biomass removals. MNR established and monitored nine locations across a range of black spruce-dominated site type. The Canadian Forest Service established a companion project of nine locations across a range of jack pine-dominated site types.

Forest research plot measurement

The project examines:

- The important processes involved in nutrient cycling over a range of boreal ecotypes;
- The recovery patterns of the above-mentioned processes after harvesting and compares these changes to post-wildfire patterns; and
- Site type sensitivity to nutrient removals.

This collaborative project represents one of the oldest, most comprehensive biomass removal experiments in Canada, and will provide empirical results of vital importance to sustainability analysis and policy development.

The research team began synthesizing key results, based on the first 15 years of the trial. In 2010/11 two journal manuscripts were produced in the following areas:

- Examining growth-limiting constraints during stand development with emphasis on changing microclimate conditions and soil nutrient availability; and
- Defining the role of downed woody debris in carbon and nutrient retention.

Currently, two graduate students are furthering work on coarse wood debris in carbon and nutrient retention and understory plant diversity.

A closely related new project, examining potential implications of short rotation biomass harvesting in intensively-managed black spruce plantations, was recently established near Nipigon, Ontario. This project was designed to examine the potential draw-down of soil carbon and nutrients on short rotation (40 years) biomass harvests, and to model the long-term impacts on productivity in future rotations under an intensive forest management regime.

MNR's Southern Science and Information section, the Ontario Forest Research Institute, and the Canadian Forestry Service are working on a field study looking into the effects of harvesting biomass from shade tolerant hardwood stands using a partial harvesting system. There are four study sites: Haliburton Forest, Nipissing Forest, Algoma Forest and the Petawawa Research Forest.

Moose survey

Sapsucker feeding young

Wildlife Population Monitoring

Provincial wildlife population monitoring is undertaken to determine if healthy populations of forest wildlife continue to be found across the AOU and to contribute to an understanding of how forest management affects wildlife populations.

MNR took the following steps to continue to implement the wildlife monitoring program:

- Continued Boreal Science Co-operative partnership that included migration monitoring, breeding bird survey, nocturnal owl survey and woodcock survey;
- Continued partnership with the University of Guelph in Algonquin Park small mammal monitoring;
- Multi-Species Inventory and Monitoring data collected at 17 sites in ecoregion 3W; including bird surveys and terrestrial encounter surveys, camera traps and habitat; and
- Conducted ongoing moose and caribou aerial inventory surveys.

Forest Ecosystem Science Co-operative Inc. in partnership with the MNR, is undertaking a caribou habitat and population project. This project is designed to measure the impact of key ecological variables (e.g., food availability, distance from roads, energetic cost, predator density, competitor density, and predation risk) on movement patterns, survival and offspring recruitment of over 100 woodland caribou equipped with GPS radio-collars. The project area includes three large landscapes that have been exposed to varying degrees of forest management activities (proximal to communities of Pickle Lake, Auden, and Cochrane). Demographic rates will be related back to the mix of habitats experienced by each of the animals over the course of the year. This information will be used to develop computer models to assess population viability in relation to alternative forest and wildlife management practices. In 2010/11, 60 caribou and 25 wolves were collared to successfully initiate the project on the ground. Over 40 forest stands were intensively sampled during the summer to estimate variation in vegetation abundance. Over 30 wolf kill sites were visited to evaluate the effect of habitat features on kill success.

MNR continued to develop other population monitoring methods including:

- Aerial survey methods development determining optimal survey design for detection of rare terrestrial mammals (caribou and wolverine);
- Trial enhancement of Breeding Bird Survey; and
- Provincial Wildlife Population Monitoring Program Plan.

Boreal landscape

Overview

Educating Professionals and the Public

In 2010/11, extensive policy transfer and professional and technical training was delivered: 237 people attended compliance training sessions; 402 people attended 9 sessions covering a variety of topic areas in forest management planning; and over 250 people participated in Canadian Institute of Forestry Lecture Series (22 lectures), Resource Management Webinars and Presentations and a Science Matters workshop on Forest Health.

MNR's Policy Division has created a learning management system to give clients the knowledge, tools and support they need when developing their forest management plan. Eight e-learning modules for LCC training were developed in 2010. The Learning Compass gives clients access to face-to-face training opportunities, webinars and a variety of other e-learning resources. Topics presented included; Black Bear Encounter Training, Presentation Skills and Parks and Protected Areas.

MNR also participated directly in forester education by creating forester intern positions (74 positions in 2010/11) and by participating on forestry program advisory committees at Sault College and Lakehead University. Forester intern lectures were developed to share information on forest management programs and practices with new staff. A partnership with the Ontario Forestry Association supported the production of Focus on Forests teacher's kits and forestry fact sheets, the Focus on Forests website, and events such as Envirothon.

Public education was supported by MNR booths at the Toronto Sportsmen's Show in March 2011. Display themes included; duck carvings showcasing Ontario wood species, Ontario's Forests and Climate Change, Invasive Pests, and Wood is Good. Improvements were made to MNR's public website, with increases in the amount of information posted and available. This forum is being used as a communication platform and is providing information supporting a variety of public inquiries on natural resource management.

The NEBIE Framework
Sylviculture intensive

Forest Intern field training

Information and Analysis

Upgrades were made to the Natural Resources Values Information System (NRVIS) with eight maintenance upgrades bringing small application changes and data layer enhancements. New data layers being developed include: Ontario hydrographic data, Species at Risk data, and Forest

Resource Inventory (FRI) status layer. This layer is to be incorporated into a web mapping service for users to view FRI data that is currently available.

In the Forest Information Portal, technical specifications were developed to ensure compliance with the 2009 Forest Management Planning Manual and 2009 Forest information Manual (changes to Annual Work Schedules, Annual Reports and Planning Inventory specifications).

Other inventory management projects undertaken included;

- Enhancements to the stand and site guide water classification tool;
- Access provided to the Land Information Ontario warehouse for FMP planning inventories; and
- Database development of Forest Management Guide exceptions monitoring within FMPs.

Non-Timber Forest Products

Non-timber forest products (NTFP) include many species of forest plants harvested for various reasons, including medicinal plants (such as Canada yew), wild foods (mushrooms, blueberries, maple syrup), floral greens (ferns, boughs), fragrances (balsam fir), fibres (cedar bark, spruce roots), plant dyes (walnut), garden plants (wild columbine), seeds (from cones) and arts and crafts materials. People gather NTFP for a variety of reasons, including for subsistence living, or for cultural, spiritual, commercial, recreational or educational purposes. The harvesting of NTFP is usually compatible with commercial timber harvesting operations. Some of the best known NTFP in Ontario are Christmas trees and maple syrup.

Ontario is the third largest maple producing province with production of 1,310 metric tonnes, valued at $11.2 million and concentrated in the southwest region areas, mainly in Waterloo County (Agriculture and Agri-Food Canada). Canada yew (*Taxus canadensis*) (also called eastern yew or ground hemlock) is a native woody evergreen shrub that grows in the understory of the Great Lakes-St. Lawrence and Boreal forests of Ontario. The foliage, bark, and roots of this shrub are a source of the valuable anticancer chemical paclitaxel (the drug form is called Taxol) and two other taxanes of pharmaceutical interest. Currently, inventory information about Canada yew is limited.

Maple syrup production

Traditional medicinal plants

Far North Carbon Research

Ontario's Far North is part of one of the world's most important carbon sinks. It is unclear how disturbances and climate change will affect the region's forests and its stored carbon. To better understand the effects of disturbance and climate change on Far North carbon, researchers at MNR's Ontario Forest Research Institute are working on two initiatives (detailed below). Their results will support land use planning in the Far North as governed by Bill 191, the Far North Act.

The first initiative involves mapping forest carbon stores in Ontario's Far North and projecting what changes can be expected under various forest management and climate scenarios. Researchers are working with partners at the University of Toronto to develop a stand-level model to understand how climate change can affect forest growth rates in the Far North. They will scale their results to the landscape level using another model that accounts for the distribution of forest types and occurrence of stand-replacing disturbances such as fire. Determining expected future forest landscapes will allow researchers to project what forest carbon stocks will be under several simulated forest management and climate change scenarios. In 2010/11, researchers compiled data and calibrated the model.

Although not directly linked to forest management, MNR has undertaken a second initiative which improves understanding of how peatland carbon is stored and sequestered in Ontario's Far North and how that may change in response to climate change and land use practices. This work further develops knowledge in the monitoring of carbon cycling and carbon accumulations over time, how water moves through the ecosystem, and how the various peatland vegetation types have burned over time. In 2010/11, researchers compiled data on peatland and permafrost carbon storage as well as related information about greenhouse gas fluxes, hydrology, and fire. Products from this work will include spatial data layers showing carbon storage and sequestration in permafrost and non-permafrost peatlands, information about peatland carbon storage and sequestration. These data will help researchers refine estimates of how much carbon is sequestered in Ontario's Far North and develop a peatland carbon sequestration model. The model should be ready by 2016.

Far North research

Conclusion

Overview

Annual Report on Forest Management- Final Word

Ontario's forests provide a variety of environmental, economic and social benefits to the people of Ontario. The 2010/11 Annual Report on Forest Management outlines the effectiveness of MNR's forest programs in ensuring Ontario forests are well-managed for future generations.

This report has provided key information on the results of sustainable forest management in Ontario and addresses the legal requirements outlined in the CFSA and the Declaration Order regarding the MNR's Class Environmental Assessment Approval for Forest Management on Crown lands in Ontario.

Your feedback is appreciated. If you would like more detailed information or have any comments on the Annual Report, please email them to: ontforests@webmail.mnr.gov.on.ca

More information about MNR programs is available at: http://www.ontario.ca/forests.

conclusion